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POLITICAL ASPECTS OF INTERNATIONAL FINANCE

I. INTRODUCTORY

THAT finance and the financier play a large part in the processes of diplomacy has long been a matter of notoriety. But no writer, so far as I know, has ever accomplished anything approaching a systematic survey of the available information bearing on the financial background of diplomacy or on the diplomatic background of international finance. With the exception of a few detailed monographs on limited phases, such discussions of the subject as have appeared in print have either rested their conclusions on very scanty information or have failed to disclose the evidence upon which these conclusions were based. I here present something in the way of a survey and critical analysis of such instances of alliance between international finance and diplomacy as I have been able to discover. The subject is big, however; the source-material voluminous, scattered, and often inaccessible or accessible only with great difficulty; and a really definitive and exhaustive study is beyond my resources of time, energy, and historical capacity. In order, therefore, to reduce my task to practicable proportions, I have arbitrarily limited the scope of my investigation in several respects. I confine my analysis to instances involving in some way government borrowings, thus excluding all cases in which investments by *private* investors in *private* undertakings had or

acquired political significance, and notably such historical episodes as: the process whereby German colonial expansion followed German traders' and concessionaires' investments, the diplomatic controversies resulting from American investments in Mexican oil and agricultural land, the influence of British investors in Transvaal gold and diamond mines on the British attitude toward the Boer republics, and the part allegedly played by investments of Russian court circles in Yalu River timber projects in bringing about the Russo-Japanese War. I exclude also all intergovernmental loans made in war time by one belligerent to an ally, thus avoiding the necessity of dealing with such detailed and intricate episodes as: the financial relations of Britain and France with their respective allies during the Napoleonic Wars, the loans to the United States by France and Holland during the Revolutionary War, and the inter-allied loans during and after the Great War. Furthermore, I make no claim to having uniformly carried my investigation back to primary sources, though where that could be done without a disproportionate expenditure of effort, and where the secondary materials were especially unsatisfactory, I have endeavored to do so. The material and the sources are mainly historical in character, and I am not a historian. I have tried merely to bring together sufficient material to permit of its classification and preliminary analysis and to make possible a tentative interpretation of the significance of the interrelations between international finance and diplomacy. The recent attainment by the United States of the creditor status makes it especially important that Americans become informed as to the problems which arise out of such status. This study will demonstrate, I believe, that there is much in the past experience of other countries with respect to foreign investments which has immediate and important bearing on American problems and prospects.

My plan of procedure will be to deal, first, with the general economic background of international investments; to be followed by studies of (1) the precise techniques of government restriction and promotion of the export of capital, (2) the economic objectives of governmental interference, (3) the relations between *haute finance* and high diplomacy, (4) "peaceful pene-

tration" and forcible intervention, (5) international financial controls in debtor countries. The general historical background will be sketched only in the minimum degree essential to make the financial aspects of the episodes intelligible, and a knowledge on the part of the reader of the general outlines of modern political history, especially in its diplomatic aspects, will be taken for granted.

II. THE ECONOMIC BACKGROUND OF INTERNATIONAL INVESTMENTS

Capital crosses national frontiers in pursuit of higher rates of return, and in this respect it is, and apparently has always been, the most mobile of the factors of production. The desirability from the national point of view of permitting capital to flow freely across boundary lines began, however, to be a matter of current discussion only with the opening of the nineteenth century. The English classical economists had for most problems in international economic relations what seemed to them an adequate and very nearly obvious solution. In most instances they found an almost perfect, if not quite perfect, harmony between true national and cosmopolitan economic interests. They offered, therefore, one specific for the economic ills which beset international relations, namely, the avoidance of all legislative and administrative measures which operate to increase the economic significance of political boundaries. They believed that economic transactions which cross political boundaries should be conducted on the same terms and with the same freedom from governmental interference as if they were carried on wholly within the national frontiers. In the few instances in which they conceded the existence of conflict between the genuine economic interests of the nation on the one hand, and the outside world on the other, the classical economists were generally of the opinion that the attempt to meet this disharmony of interests by legislative means was a game not worth the playing, especially because of its liability to induce a costly retaliation on the part of foreign countries, but also because the means available to governments for dealing with such problems were ill adapted to achieve the ends contemplated. To some extent this attitude was only one

expression of their doctrinaire adherence to their general principle of laissez faire. But it was always supported by specific reasoning to the effect that the particular form under discussion of nationalistic interference with the free economic intercourse of nations was bad policy on economic grounds. It was not true of the classical economists, as is often charged, that they were anti-nationalistic in spirit and sentiment. A more accurate interpretation of their attitude is that they were convinced that true national interests could best be promoted by a generous cosmopolitanism. Generosity because it paid, rather than because it was generous, was the essence of their position.

Modern English, French, and American economists have in large measure inherited the classical tradition and have applied it broadly to economic issues arising out of the commerce of nations. It has been, I believe, a sound tradition; and its failure to govern statesmen and men of affairs as much as it has governed economists has been regrettable rather than a matter for congratulation. But in the case of the international migration of capital there are some special complications which have made it appear doubtful even to some economists who on the whole accepted the free-trade principle whether it was desirable for government to permit the unrestrained export of capital. In all countries which have been great exporters of capital, serious misgivings have been voiced in various influential quarters lest such export of capital—"drain of capital" is the tendentious phrase often used—do not seriously impair the economic prosperity of the country as a whole. In 1813 Sir Henry Parnell explained a report of a parliamentary committee hostile to the export of capital as "influenced by no other motive than . . . . the impolicy of sending our money to improve other countries while we have so much of our own lands that stand in need of the same kind of improvement."[1] Palmerston, when he made his famous declaration in 1848, asserting the right of the British government to intervene to force debtor governments to meet the just claims of British creditors, explained that its failure hitherto to exercise that right had been due to its opposition to

[1] "Report from Select Committee on Corn Trade, 1812–13," *Hansard*, 1st series, Vol. XXV, Appendix.

the emigration of British capital: "It has hitherto been thought by the successive governments of Great Britain undesirable that British subjects should invest their capital in loans to foreign governments instead of employing it in profitable undertakings at home. . . . ."[2] Such opposition, however, has been most vigorous in France, where statesmen, publicists, and manufacturers have looked upon the great outward flow of French savings as a transfer to foreign industry of financial resources which were needed for the development of home industries. This opposition to the export of capital was already prevalent in the sixties,[3] but it became particularly vehement in the years immediately preceding the outbreak of the Great War.[4] In pre-war Germany the opposition to export of capital on a great scale was especially vigorous on the part of the agrarians, who, as a debtor class, objected to anything which would raise interest rates at home.[5] But in all the important capital-exporting countries there has been some opposition to the unrestricted export of capital, and it has always been based on the argument that the country had more to gain from the employment of its capital at home than from its investment abroad, even when higher rates of return prevailed abroad. In France, Germany, and other continental countries many economists have expressed views hostile to the export of capital, and even in England some economists have questioned the wisdom of foreign investment of British capital. Ricardo, staunch free-trader though he was, stated that he would be sorry to see weakened "those feelings which . . . . induce most men of property to be satisfied with a low rate of profits in their own country, rather than seek a more advantageous em-

[2] Hall, *International Law* (4th ed., Oxford, 1895), p. 295, note.

[3] Cf. France: *Enquête sur ... la Circulation Monétaire et Fiduciaire* (1869), VI, 12, and the index of this volume, p. 702.

[4] The French polemical literature on the subject is abundant. There may especially be cited: Émile Becqué, *l'Internationalisation des Capitaux* (Montpellier, 1912); André Fontaine, *Le Protectionnisme Financier* (Paris, 1912); Lysis, *Contre l'Oligarchie Financière en France* (many editions).

[5] Cf. the interpellation by the agrarians in the Reichstag, February 11, 1911, directed against the government's inaction in the face of a greatly increased flow of German capital abroad (Schulthess' *Europäischer Geschichtskalender* [1911], pp. 24, 29 ff.).

ployment for their wealth in foreign nations."[6] Fawcett, another staunch free trader, ascribed to the export of British capital partial responsibility for the failure of English wages in the sixties and early seventies to rise in proportion with the increase in British wealth.[7] J. S. Nicholson attributed the economic decline of Holland[8] and the depression in England during the latter part of the nineteenth century to excessive export of capital.[9] J. M. Keynes has recently been advocating governmental control of the volume of export of British capital as a safeguard against excessive export.[10] In the United States no economist seems as yet to have expressed hostility to the export of capital. But in the press and elsewhere there have been signs of growing concern as the amount of American capital sent abroad has been rapidly mounting; Secretary of Labor Davis has advocated that the sending of "American money abroad to develop foreign industries" be stopped in order to maintain American prosperity and to check unemployment;[11] and to Secretary of Commerce Hoover has been attributed the statement that: "A billion dollars spent upon American railways will give more employment to our people, more advance to our industry, more assistance to our farmers than twice that sum expended outside the frontiers of the United States."[12]

If the export of capital is not artificially stimulated, and if it is conducted by the individuals participating therein with the same degree of judgment and of honest management as is domestic investment, I can see no sound basis for restricting it on the ground that it reduces the national income or the prosperity of the capital-exporting country. Capital will not ordinarily be sent abroad for investment unless it promises to yield as high net returns to the investor as if it were invested at home. The

[6] David Ricardo, *The Principles of Political Economy and Taxation* (Everyman edition), p. 83.

[7] Henry Fawcett, "Effect of Increased Wealth on Wages," *Contemporary Review*, January, 1876.

[8] Has there really been an "economic decline" in Holland?

[9] Preface to his edition of Adam Smith's *Wealth of Nations* (1895), p. 26.

[10] *Nation and Athenaeum*, October 23, 1926.

[11] *New York Times*, February 17, 1928.

[12] *Current Opinion* (April, 1922), p. 448.

reduction in the amount of domestic investment will tend to raise interest rates at home and to reduce the earnings of domestic labor and land, but it is easy to demonstrate the probability, in the absence of special countervailing circumstances, that the gain to domestic capitalists on both foreign and home investments in the form of higher interest rates will exceed the loss to laborers and landlords. The rise in interest rates, moreover, should induce a somewhat greater aggregate volume of savings, both because of the inducement of a higher rate of return and also because the interest fund is an important part of the fund out of which savings are made, and as it increases, savings should increase.[13] The amount of capital employed at home will therefore not be reduced, at least after a time, by as much as the amount of capital exported, and it is even conceivable that it will in time be greater than if no export of capital had taken place.

If secondary consequences are taken into account the case against restrictions on the export of capital will ordinarily become even stronger. If the exported capital is invested in productive enterprises, if it serves to promote the production of cheaper raw materials, foodstuffs, or manufactures abroad of a sort for which the capital-exporting country provides a ready market, if it opens up territory for settlement by emigrants from the capital-exporting country, if it operates to develop markets for the export products of that country, the probability becomes even higher that its national income will in the long run be greater because of the export of capital. John Stuart Mill's argument with respect to England can, within limits, be safely extended to capital-exporting countries in general:

> It is to the emigration of English capital, that we have chiefly to look for keeping up a supply of cheap food and chief materials of clothing, proportional to the increase of our population: thus enabling an increasing capital to find employment in the country, without reduction of profit, in producing manufactured articles with which to pay for this supply of raw produce. Thus, the exportation of capital is an agent of great efficacy in extending the field of employment for that which remains; and it may be

[13] For an excellent graphical illustration along these lines, see C. K. Hobson, *The Export of Capital* (London, 1914), chap. iii.

said truly that, up to a certain point, the more capital we send away the more we shall possess and be able to retain at home.[14]

In special cases, it is true, a plausible argument can be made for restricting the export of capital, as, for instance, when capital is attempting to escape, by flight to other countries, heavy taxation in its own, or when during emergency conditions it seems urgent to exercise close control over all factors which may adversely affect an unstable currency and exchange. Were it not that there is rarely a single source where capital to finance a promising enterprise can be obtained, and that often the immediate losses are but preludes to long-run gains, something could perhaps be said, on strictly nationalistic grounds, against the export of capital to finance foreign enterprises which are rivals of domestic industries. In France before the war many writers alleged that the banking system, owing in part to excessive centralization, had so developed that it preferred transactions in large amounts and with large-scale borrowers which could be handled economically at the head offices to a myriad of small-scale transactions necessarily conducted by minor officials at local branches; that foreign loan transactions were ordinarily large transactions, and that the typical French borrower was a small-scale farmer or manufacturer; and that consequently foreign borrowers had easier access than did domestic borrowers to French savings. If such a situation actually existed, which was a much-debated question in pre-war France, there was ground for governmental intervention if a promising means of control could be devised. Government supervision of foreign investments, not with the aim of limiting their amount, but intended to protect small investors against fraudulent, or highly hazardous, or inadequately remunerated ventures, is as justifiable as similar supervision of the home investment market, though when the debtor is a foreign government official rating of the credit standing of the debtor or of the quality of the security becomes an embarrassing responsibility which few governments will openly assume.

One valid economic objection can be made against the export of capital. Its immediate benefit, in the form of higher in-

[14] *Principles of Political Economy*, Ashley ed., p. 738.

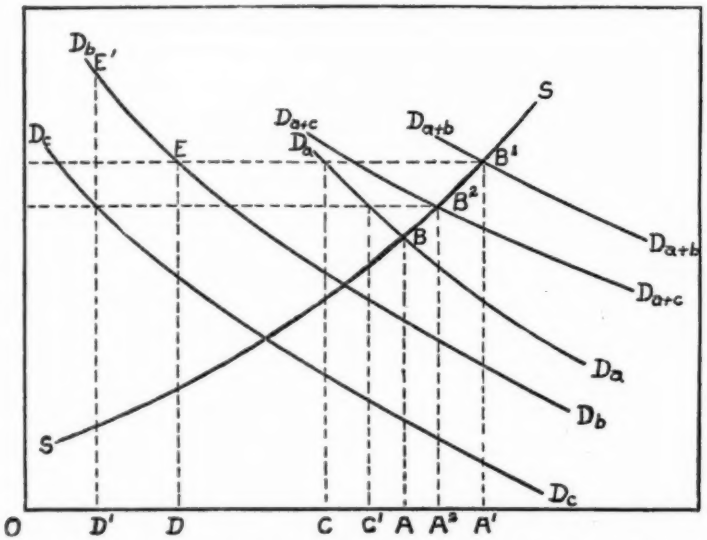
terest earnings, accrues solely to the investing class. To the other classes—laborers, landlords, the domestic capital-borrowing industrialists, farmers—the export of capital means at least at first higher rates of interest and lower returns for their labor, land, etc. Though the gain to the creditor classes should, and ordinarily will, exceed in pecuniary terms the loss of the other classes, an increase in national income which is accompanied by an intensification of the inequality in the distribution of that income may be a doubtful boon when appraised in welfare rather than in monetary terms. But the long-run advantages just enumerated which result from the productive investment of capital abroad will diffuse themselves among all classes in the capital-exporting country and will in all probability more than counterbalance for each of these classes any temporary injury which may result from the export of capital.

Even in the absence of governmental restrictions there is ordinarily operative a check against the export of capital in the form of a bias in the estimate of the risk involved in distant, and especially foreign, investments which makes investors insist upon receiving a higher net rate of return from their foreign than from their domestic investments. From a careful study of the primary records Lehfeldt found that British investors on the average secured a rate of return from foreign bonds higher for the period 1898–1910 by 1.7 per cent than the average rate of return on domestic bonds for the same period.[15]

This bias will operate to make the average yield on foreign investments higher and the volume of foreign investment lower than they would be in the absence of the bias. This may be illustrated by the accompanying diagram in which the domestic demand for capital is D_aD_a, the foreign demand D_bD_b, the foreign demand after correction by, let us say, a ½ per cent bias, D_cD_c, the total effective demand is $D_{a+c}D_{a+c}$, and the supply of domestic capital is SS. Amounts of capital are measured along the horizontal axis from O, and rates of interest along the vertical axis from O. If there were no export of capital, the interest rate would be AB and the amount of investment OA. If

[15] R. A. Lehfeldt, "The Rate of Interest on British and Foreign Investments," *Journal of Royal Statistical Society* (January, 1913), pp. 204 ff.

there were no bias against foreign investment, the interest rate would be A^1B^1 on both foreign and domestic investment; and the total investment would be OA^1, of which OC would be invested at home, and OD (or CA^1) would be exported. With the bias existing against foreign investment, the interest rate will be A^2B^2 on home investments and D^1E^1 on foreign investments; the total investment will be OA^2, of which OC^1 will be invested at home



and OD^1 (or C^1A^2) will be exported. In other words, the bias against foreign investment will raise the interest yield of foreign investment from A^1B^1 to D^1E^1 and will reduce the export of capital from OD to OD^1.

From the point of view of the debtor country it is difficult to conceive what economic considerations of even superficial plausibility could be raised against the free import of capital to be used for productive purposes. And in fact restrictions against the import of capital on economic grounds have been rare. Many countries, it is true, have in the past imposed and do today place onerous restrictions upon the invasion of their territory by foreign business enterprise, such as limitations on the degree of for-

eign ownership of the share-capital of mining, banking, or other undertakings, restrictions on foreign membership of directorates, restrictions on alien ownership of real estate, and so forth. But such restrictions usually have a political rather than an economic purpose, namely, the establishment of safeguards against "peaceful penetration"; their economic consequences, instead of being welcomed, are regretted as necessary economic sacrifices upon the altar of political security. Even when such restrictions do have an economic objective it is the exclusion, not of foreign *capital,* but of the foreign *entrepreneur,* which is generally aimed at. Keeping out the foreign entrepreneur may, and in countries deficient in a home supply of business enterprise and ability often does, involve keeping out foreign capital. But the exclusion of foreign capital cannot be regarded as the aim of the restrictions if, as is usual, these apply only to foreign ownership of real property or of common stock and do not apply to foreign ownership of bonds or other equities which do not carry with them the right to participate in the management of the enterprises represented by them.

In a few cases, however, restrictions have been imposed, or seriously contemplated, upon the entrance of foreign capital as such, where the objectives appear to have been wholly or mainly economic. Spain, for example, places restrictions upon the entrance of foreign capital in keeping with the recommendation of an official Commission for the Protection of the National Industry of Spain that foreign capital should not be encouraged to enter that country.[16] An Ecuador law, which does not distinguish between foreign investment in and foreign management of Ecuadorian enterprises, exempts from taxation companies engaged in manufacturing if at least one-third of their capital is owned by Ecuadorians.[17] In Rumania it has been made difficult in recent years for foreign capital to enter, and this policy has been attributed by some observers to the desire of the dominant Bratianu brothers to reserve the opportunities for the profitable ex-

[16] *United States Commerce Reports* (May 5, 1920), p. 710.

[17] *New York Times,* February 7, 1926.

ploitation of the natural resources and the labor of Rumania for themselves and their friends.[18]

Even in the instances cited, however, further investigation would probably disclose that the restrictions were directed at foreign management rather than foreign capital, and that if no distinction was made in the legislation it was because these were countries to which foreigners would not send their capital unless they could keep its management in their own hands. It would require an extraordinary attachment to the fallacies of protectionism to persuade a country that the benefits which a very small group of wealthy domestic capitalists would derive from rates of interest made artificially high by restrictions on the import of capital were of greater weight than the advantages to the national economy as a whole of abundant capital available at low rates. If there are wealthy capitalists who desire financial protectionism in order that they may get higher rates of return on their own investments they may usually be expected to be shrewd enough to find other and more popular reasons for supporting restrictions against the entrance of foreign capital. I have found one case, however, where an unusual degree of naïveté has resulted in an unusual degree of frankness. Canada is one of the world's great borrowers of outside capital, and the huge importations of capital undoubtedly tend to lower the rates of pure interest which domestic capital can earn. A. E. Ames, a financier and president of a great Canadian investment concern, urged a few years ago that the welcoming of new capital into Canada should be made contingent upon "whether, if such moneys are imported into the country, there is left sufficient remunerative employment for Canadian capital." "It would be unwise," he said, "to borrow money from the outside world when that would mean a large quantity of our own money lying idle, or not well employed."[19]

A strong case can be made out for central governmental control over the borrowings of local governments, and perhaps even of private business. But it is not obvious why the economic dan-

[18] Cf. *Spectator* (London), "Letter from Bucharest" (March 13, 1926), p. 483; *New York Times*, July 3, 1926.

[19] *Saturday Night* (Toronto), January 7, 1922.

gers of excessive borrowing are greater when the capital borrowed is foreign rather than domestic capital unless there is uncertainty about the stability of the foreign exchanges and the foreign loans are short-term loans which may mature at a time of stress for the national currency and thus add to its difficulties. In Germany the central government is exercising a certain measure of control of foreign borrowings by state and municipal governments in order to restrain extravagant undertakings. In Italy also the central government does not as a rule permit provinces or municipalities to borrow abroad, and the Minister of Finance has declared that he will not authorize foreign borrowing abroad by private concerns unless he is given adequate assurance that the proceeds of such loans will be used only for productive and remunerative enterprises.[20] In both cases, however, to the extent that such control is wise, it would be equally wise if applied to domestic borrowings.[21]

III. THE TECHNIQUE OF POLITICAL RESTRICTION OF CAPITAL EXPORT

It should not be expected that the attitude of any particular government toward the export of capital can be described by a single and simple formula. Governments usually consider each case in the light of the special circumstances surrounding it, and the same government may at the same time be actively encouraging foreign loans of one sort or in one direction and doing all it can to prevent other foreign loans. In this section there will be examined the methods which have been used by governments to discourage or prevent the making of foreign loans of which they disapproved.

During the period of mercantilism, governments closely controlled money transactions with foreigners, including loan transactions, in the delusion that they could thereby increase the national stocks of the precious metals. During the recent war and the period of adjustment following it closely similar methods of strict and inquisitorial supervision over monetary transactions

[20] *New York Times*, February 18, 1928.

[21] The President of the German Reichsbank has advocated the extension of the German control to domestic borrowings. See *London Times*, November 15, 1927.

with foreign countries again made their appearance in many countries, and are still present in some degree. Their main purpose as a rule has been to protect unstable currencies against violent depreciation and to prevent the escape of capital from taxation. With these controls we are not here concerned, though it is of significance that careful observers of their mode of operation have generally come to the conclusion that, whether wise or not in theory, they have in practice been widely evaded. Modern restrictions on the export of capital, applied in order to foster some general economic or political governmental policy, can be divided into two main classes according to the techniques of control employed: (*a*) formal and open procedures, applied in conformity with statutes or decrees, and (*b*) informal exercise of pressure by government officials on bankers. Information as to the latter is for obvious reasons scattered and incomplete. Sufficient is known, however, to justify the generalization that although only a few countries have followed a policy of systematic, formal, and open control, the governments of all of the great capital-exporting countries have at one time or another exercised pressure on banking houses to abstain from projected foreign loan transactions which clashed with the economic or diplomatic policies of their governments. The variety of methods whereby such control as there was has been exercised can best be indicated by a brief survey of the practices of the various governments.

In modern times the Dutch were the first to lend large sums abroad, and during the seventeenth and eighteenth centuries Holland was the great money market for the western world. Holland has continued to be an important creditor country, especially if account is taken of the proportion of her foreign investments to her total capital resources, but in the nineteenth century the growth of London, Paris, Frankfurt, Hamburg, and Berlin as important financial centers relegated Holland to a relatively less important rôle in the field of international finance than she had hitherto played. The Dutch capital market appears to have been a wholly "free" market since the early part of the nineteenth century. Prior to that, however, the foreign loan operations of the Dutch banking houses were subject to

government supervision. In 1700 a decree of the States General prohibited foreign loans unless official approval had previously been obtained. Later, measures were enacted which prohibited investments of Dutch capital in foreign corporations, in order to prevent Dutch funds from financing concerns competing with the Dutch chartered companies trading with the East and the West Indies. It is said, however, that these measures were not successfully enforced.[22] In 1807, under the Napoleonic régime, the approval of the king was made a prerequisite for the emission of a foreign loan, and official approval of the prospectus of the loan was also required.[23]

England was probably in the balance a debtor rather than a creditor country until after the end of the Napoleonic Wars. But the participation of English capital in foreign loans was by no means unknown before then, and in the French literature of the fifteenth and sixteenth century "Anglais" was already used as a derogatory term signifying creditor.[24] After the breakdown of the mercantilist regulations the London money market became free to all borrowers, whether English or foreign. But in 1730, when Walpole learned that the Emperor Charles VI of Austria was negotiating with London bankers for a large-sized loan, he had a law enacted prohibiting loans to foreign governments without royal license. This prevented for a time the grant of a loan to Charles VI, but in 1734 a license was granted by George II of England to the ambassador of Charles VI, authorizing him to borrow, and the British subjects to lend, £300,000.[25] Since then there have been no formal restrictions in England upon foreign loans, if exception be made for the temporary controls set up in England during and after the Great War, but now no longer in

[22] *Economist* (London, February 15, 1913), pp. 333 ff.

[23] Charles Lesage, *Napoléon 1^er^ Créancier de la Prusse* (Paris, 1924), p. 263.

[24] Cf. Edouard Fournier, *Le Théâtre Français Au XVI^e^ et XVII^e^ Siècle*, p. 56.

[25] The text of the license is given in Sir Ernest Satow, *The Silesian Loan and Frederick the Great* (Oxford, 1915), p. 200. This loan later became the subject of a famous controversy in international law because of the attempt of Frederick of Prussia, who had become heir to the loan upon the transfer of Silesia to Prussia, to set off against his liability to the British holders of the debt his claims against the British government for unwarranted seizures of Prussian vessels. See *ibid.*, and Martens, *Causes Célèbres* (2d ed., Leipzig, 1858), II, 97 ff.

force.[26] On March 2, 1922, the Earl of Crawford, replying on behalf of the government to a question in the House of Lords, declared that "there is no government control over capital issues and it is the policy of the government not to intervene between foreign governments and potential lenders in this market."[26a]

I know of no published evidence that there was exercised in England during the pre-war period anything approaching a continuous and systematic government censorship over the flotation of foreign loan issues in British money markets. Continental writers have commonly taken for granted the existence of such a control in England. But it is a peculiar characteristic of the second-rate literature on international economic relations that otherwise responsible persons will without a shadow of evidence unhesitatingly impute to foreign countries the pursuit of questionable practices, sometimes in order merely to cast discredit upon foreign countries, sometimes in order to support an argument for the adoption or continuance of such practices by their own country.[27] A highly competent and well-informed English economist, however, has said that "it appears . . . . to be customary for financiers to seek the support of the Foreign Office when negotiating new loans,"[28] and if an informal control did exist, it probably took the form indicated by this statement of a voluntary consultation by financiers with Foreign Office officials before they definitely undertook to underwrite foreign loans. In the midst of the Crimean War there were English subscriptions to a Russian loan, and the British Foreign Minister felt himself

[26] In 1924 the Bank of England maintained an "Embargo on Foreign Issues," i.e., an unofficial censorship of foreign issues intended to protect sterling exchange by controlling and if necessary preventing the drain on English funds resulting from subscriptions to foreign security issues. In November, 1925, the control, which had never had statutory authority, was abandoned. It never applied to private English purchases of foreign securities. Opinion as to its effectiveness varies. Cf. T. E. Gregory, *The First Year of the Gold Standard* (London, 1926), pp. 83 ff.

[26a] *Parliamentary Debates*, Lords, 5th Series, XLIX, 279.

[27] Cf. Allyn Young, "Economics and War," *American Economic Review* (March, 1926), pp. 1 ff.; A. P. Winston, "Does Trade 'Follow the Dollar,'" *ibid.* (September, 1927), pp. 458 ff.; and Jacob Viner, *Dumping: A Problem in International Trade* (Chicago, 1923), pp. 35 ff. and 61.

[28] C. K. Hobson, *The Export of Capital* (London, 1914), p. xxiv.

helpless to prevent such aid to the enemy.[29] This would indicate that at least at that time the British government exercised no close control over the London money market. Indirect evidence as to the existence of some measure of governmental control could perhaps be found in the fact that new Russian loan issues on the London market followed with some closeness the variations in British diplomatic relations with Russia, Russian issues being absent from the London market when the relations with Russia were troubled and making their reappearance when friendlier terms existed between the two countries. But this could be explained without reference to the existence of control as being due: (*a*) to the patriotism of English bankers and their reluctance deliberately to go counter to known British diplomatic policy, and (*b*) their natural desire to avoid financial commitments with nations which might possibly be soon involved in war with their own country. In any case the only specific instances I have been able to find which confirm in any degree the existence of a policy of supervision over foreign loan flotations were instances in which the diplomatic interest of Great Britain was obvious and unusually pressing.

In 1879 the French minister of foreign affairs, Waddington, in a dispatch to the French Consul-General in Egypt, explained that the English and French governments had facilitated the opening of the London and Paris money markets to a loan of the Khedive of Egypt only after he had given certain pledges, thus indicating that prior to those pledges there had been a government veto on such a loan in London.[30] The British government twice used its influence successfully to prevent participation by British bankers in the flotation of Bagdad Railway loans, once

[29] Lord Clarendon to Lady Clarendon, December 19, 1855: "Only think of the Russian loan being levied here! in the ordinary way of business, too, so I don't see how it can be interfered with! £200,000 left London yesterday, and the pressure on the money market will be great" (Sir H. M. Maxwell, *Life and Letters of . . . . [the] Earl of Clarendon* [London, 1913], II, 107). Cf. also the *Economist* (London, December 22, 1855, p. 1402). The loan does not appear to have been publicly issued in London, however, and such English subscriptions to it as were made must have been made privately through the mediation of continental banking houses.

[30] De Freycinet, *La Question d'Égypte*, p. 172.

reluctantly in 1903 in response to the pressure of English public opinion which was hostile to English co-operation with the German enterprise, and again in 1910, when Sir Edward Grey, upon representation from France, persuaded Sir Edward Cassel not to put in a bid for Bagdad Railway bonds.[21] But in 1912 an English banker, Crisp, floated a loan to China, although the British government was giving its support to the Consortium and wished all Chinese financing to be confined to the syndicates participating in the Consortium. He was reprimanded by the Foreign Office, but he surrendered his contract for a second loan only after it had been arranged that he should be paid £150,000 by China.[21a] There is no ground for doubt that London was the freest from political interference of the Great European money markets before the war. The dominance of laissez faire doctrines in England was probably chiefly responsible. But diplomatic considerations were most likely to be involved in loans to continental governments, and London since the first half of the nineteenth century had not been an important market for such loans. There was less incentive, therefore, to the British than, for example, to the French and German governments to adopt a policy of supervision over foreign loan issues. It is likely also that English bankers were on the whole more to be trusted than French or German bankers to avoid on their own initiative participation in transactions in conflict with the foreign policy of their governments, because the English bankers were less "international," in less intimate union with the bankers of other countries, than were many of the great French and German banking houses.

In France governmental control over the flotation of foreign loan issues has been open and acknowledged. The central feature of the control is governmental supervision of "official listing" on the Paris Bourse. This supervision goes back to at least 1785, when an official decree excluded from listing on the Paris Bourse any securities except French government bonds and for-

[21] Edward M. Earle, *Turkey, the Great Powers, and the Bagdad Railway* (New York, 1923), pp. 93, 224 ff.

[21a] *China Year Book*, 1914, pp. 379, 412; Great Britain, *Parliamentary Papers, China No. 2* (1912), Nos. 22 and 30.

eign exchange.[32] From 1785 to 1823 the only foreign issues listed, presumably by special dispensation from the decree of 1785, were a loan to the King of Saxony in 1811, and loans to the Kingdom of Naples in 1818 and Sicily in 1821, all of them "political" loans to allies or vassals of France.[33] Foreign securities, public and private, were admitted to trading on the Bourse, but without the privilege of official listing, in 1803. A royal ordinance of May 29, 1816, gave the minister of finance supervisory power over the Paris Bourse.[34] A royal ordinance of November 12, 1823, authorized the official listing of foreign government bonds on the Paris Bourse, subject to the approval of the minister of finance (economic considerations) and the minister of foreign affairs (political considerations). In 1858 listing privileges were extended to foreign railroad securities, and in 1859 to foreign company securities in general, subject in each case to ministerial approval. There is an annex to the Paris Bourse, a sort of "curb" or subsidiary exchange, the "Coulisse," in which securities are traded which are not listed on the *cote officielle*. By a decree of February 6, 1880, the government abandoned its previous insistence upon the necessity of prior official approval before the securities of foreign political subdivisions, provinces, counties, municipalities, etc., could be listed on the Coulisse, but it still retained its right of veto of the listing on the Coulisse of the issues of foreign sovereign states. A decree of December 15, 1875, gave to the minister of finance the right to prohibit the flotation in France of a foreign loan other than that of a sovereign state, without respect to whether listing privilege was sought for it or not.[35] Such are the legal bases of such formal control as the French government can exercise over foreign loan flotations.[36]

It is to be noted that the strictest powers of control are exercised over the *cote officielle* or official list of the Paris Bourse. Before the war Paris was the great market of the world for gov-

[32] Henri Becker, *Les Emprunts d'États Étrangers* (Paris, 1880), p. 24.

[33] Cf. Charles Lesage, *op. cit.*, p. xv.

[34] This power was extended to the provincial bourses in 1862.

[35] I have been unable to find out whether this decree has ever been repealed.

[36] Becker, *op. cit.*, pp. 24 ff; Becqué, *op. cit.*, pp. 113 ff.

ernment securities, and official listing on the Paris Bourse was extremely important, if not always vital, to the successful flotation of a major government loan in France. French opinion seems to hold that official listing is essential if a large foreign issue is not only to be initially floated at a good price but is to be safe against capricious fluctuations in market value. To a foreign government, moreover, the public flotation of a loan in France after it had been refused official listing would mean serious loss of prestige and impairment of its credit. The official power of veto over official listing was, therefore, an effective instrument of control over foreign loan flotations in pre-war France.

Even though the Paris Bourse and the Coulisse were closed to them, however, there would still remain several channels of access for foreign governments to the French money markets. There is an unofficial exchange in Paris, the "bankers' bourse," which has at times handled foreign issues of substantial proportions successfully. Thus in April, 1911, six months after the French government had vetoed official listing of a government of Hungary loan, the city of Budapest successfully floated a loan of Fr. 100,000,000 through listing on the Paris *cote en banque,* or bankers' bourse.[37] There are the provincial bourses, which are not so closely controlled by the government. French financial houses have considerable influence over the Brussels Bourse, and French investors have grown accustomed to buying securities listed on the Brussels Bourse because of the practice of some French banking houses of making their flotations in part or in whole in Brussels in order to evade the French security taxes. There is always the possibility of private sale by the banks over their counters.

The veto power of the French government over listing on the Paris Bourse seems to have been allowed to remain inoperative for many years. In any case it was not systematically used until a few years before the outbreak of the war. Poincaré has laid claim to the credit for having brought it into active opera-

[37] Sigmund Schilder, *Entwickelungstendenzen der Weltwirtschaft* (Berlin, 1912), II, 428 ff.

tion again.[38] Caillaux, in 1913, speaking to a motion in the French lower house that admission to official listing be refused to all foreign loans until a prospective French government loan had been successfully floated, declared that in his previous periods of office as minister of finance he had never admitted foreign loans to official listing unless they assured to France "political or economic advantages," and that he had always taken into prior account the needs of the French treasury.[39] He promised to follow the same rule in the future, and secured the substitution for the motion referred to before of a resolution which obligated the government to make use of its veto power to protect the interests of the treasury, but did not bind it to any specific action. During and since the war, French statesmen, instead of being contrite over their exercise of the veto power during the pre-war years, have been apologetic for not having made more effective and systematic use of it in furthering the economic and diplomatic policies of the government.[40] From about 1909 to the outbreak of the war, however, the veto was repeatedly applied. In many cases it was not necessary to declare a formal veto, as the French bankers and the foreign governments generally sounded out the proper officials before they came to definite arrangements. Permission to have their loans listed on the Paris

[38] Raymond Poincaré, *Au Service de la France* (Paris, 1926), I, 307.

[39] "J'ai gèré les finances de ce pays pendant six ans, près de sept ans, et bien des fois la question des emprunts étrangers s'est présentée devant moi. Mes règles directrices ont toujours été les suivantes. En premier lieu n'admettre que les emprunts étrangers présentant pour la France des avantages politiques ou des avantages économiques. En second lieu, envisager avant tout et par dessus tout les besoins de Trésor, les necessités de ses disponibilités" (Chambre Des Députés, *Débats Parlementaires* [December 11, 1913], p. 3762).

[40] Cf. the speech of M. Ribot, then minister of finance, before the budget committee on December 19, 1914: "Par la direction qu'ils donnent à l'épargne publique [les établissements de crédit] disposent d'une puissance considérable qui doit s'employer non seulement dans l'intérêt de leurs actionnaires, mais aussi dans l'intérêt de la France au dehors. Ce serait une injustice de généraliser les reproches qu'on a pu, à cet égard, faire à certains de ces établissements. On peut d'ailleurs se demander si le Gouvernement lui-même a usé toujours avec une continuité de vues suffisante de l'autorité effective dont il dispose par son droit de surveiller les admissions à cote et de l'influence qu'il exerce par ses conseils et ses directions" (quoted by Ernest Tisserand, *Pour les Finances d'un Dictateur* [Paris, 1920], p. 175).

Bourse was for many European governments one of the important objectives of their diplomatic relations with France.

The French government did not confine itself to control over the Bourse as a means of supervision over foreign loan transactions. By its charter right of nomination of the directorate of the Crédit Foncier and of inspection of its transactions at any time, the French government can exercise an effective influence over this important bank and its subsidiary and associated establishments. This bank was an important instrument of French economic penetration in Egypt, and at one time (in 1879) it had in its portfolio Fr. 180,000,000 of Egyptian securities, as compared to a total capital of only Fr. 80,000,000.[41] In 1903, Delcasse, the then foreign minister, made a solemn public announcement that if a French banking syndicate which was preparing to participate in the financing of the Bagdad Railway proceeded with the project it would be necessary for him officially and formally to disavow the syndicate, as well as to veto the listing of the Bagdad Railway securities on the Bourse.[42] An Austrian writer claims that in 1910 the French government asked French banks not to accept new Turkish or Hungarian securities as collateral for loans.[43] Listing on the Paris Bourse of loan issues of these governments already having been vetoed, this further step, if it was actually taken, was obviously intended to check the private sale of these securities in France. Perhaps most important of all, however, was the quiet but energetic pressure which the ministry of foreign affairs exercised. It is the regular duty of one of the higher officials of this ministry to keep in touch with the operations of the great banks in the field of international finance, and to make known the wishes of the government. It was quite generally understood by the bankers, from 1870 to the Great War, that there was a tacit government veto on the public flotation of German issues, and the prohibition of German government loans was obeyed although it had never been openly

[41] Charles Lesage, "L'Achat des Actions de Suez," *La Revue de Paris* (November 15, 1905), p. 345.

[42] K. Helfferich, *Georg Von Siemens* (Berlin, 1923), II, 140.

[43] Schilder, *op. cit.*, p. 355, note. The German government upon at least one occasion also made use of this device. See *infra*.

proclaimed.[44] Government officials frequently gave orders to the French banks. During the Crispi régime, Italy found the French banks and the Paris Bourse hostile to Italian bond issues. Although the French government had not issued a formal official veto against Italian issues, the Italians attributed this situation to instigation from official French sources,[45] and there is confirmation of this from a neutral English source.[46] In May, 1891, the Paris house of Rothschild withdrew at the eleventh hour from its undertaking to raise a Russian loan, allegedly because of the recrudescence of Jewish persecutions in Russia. But Russia attributed the Rothschild withdrawal to the prompting of the French government, which resented the refusal of Russia to sign a military alliance. Upon the removal, later in the same year, of the political tension between the two powers and the renewal of the Triple Alliance, Russia again found French bankers receptive to proposals for a large loan.[47] In 1911 the French government ordered a French banking house which had floated a Paraguay government loan to return their subscriptions to any subscribers to the loan who requested it, its stated reasons being the political instability of Paraguay and misstatements in the prospectus of the loan.[48] Other instances of informal intervention by the French government will be cited later, when the objectives of French control over foreign loans are under consideration.

The French government, however, has not been able constantly to maintain as close a control over the operations of its bankers as it desired. Its control over listings on the Paris Bourse is legally unlimited, but it has not always been able to withstand the opposition of the banks against a particular veto. Over transactions of the lesser bourses and over private transactions

[44] Becqué, *op. cit.*, p. 180.

[45] Cf. Giovanni Giolitti, *Memoirs of My Life* (1923), p. 70.

[46] The British Ambassador at Rome to the British Foreign Office, November 3, 1893: "The financial situation of Italy is deteriorating every day; France's efforts to injure her commerce and to depress her credit have been crowned with a considerable measure of success" (*British Documents*, II, 286).

[47] *Memoirs of Count Witte*, pp. 170, 175.

[48] Comte de St. Maurice, *Les Instruments Modernes de la Politique Étrangère: les Emprunts d'État* (Paris, 1912), I, 31.

its control is even weaker, and the general reluctance of French governments to face parliamentary discussions of matters on which their position is not politically impregnable often make them hesitate to coerce a recalcitrant banker. The banks are a great power in France. It has been repeatedly charged by French writers that in international finance the great banks have been able to do pretty much as they pleased, regardless of the wishes of the government, and that what they pleased to do was often opposed to the economic and diplomatic interests of the government because of the commitments of the banks to foreign investments, their directorates of foreign or recently naturalized membership, and their close affiliations with foreign banking houses. In spite of the obvious exaggerations and malicious slander by which the French literature of protest is marked, one is left with suspicion that there was some basis for their charges.[49] In any case there are a few fairly well authenticated instances of the banks disregarding the wishes of the French government. In spite of Delcasse's warning to French bankers to refrain, some of them participated in 1903 in the flotation of Bagdad Railway securities, but because of the veto against their official listing the amount of actual French subscriptions was small.[50] Again in 1910, though the Turkish loan of that year was refused official listing, French bankers participated in its flotation through their German associates.[51] When the French Government in 1908–9 refused official listing to an Argentine loan, French banks nevertheless underwrote part of it and successfully floated their share. Later some banks urged the government to admit the loan to the Bourse, because French companies had subscribed to the loan and had then found that they could not legally enter unlisted securities in their balance sheets, and under pressure of the banks the government yielded.[52] In 1913 the

[49] As typical of this literature, see the writings of Lysis, *Contre l'oligarchie financière en France* (Paris); J. E. Favre, *Le Capital français au service de l'étranger* (Paris, 1916); *ibid.*, *L'Évasion économique, comment y a collaboré la Banque de l'Union Parisienne* (Paris, 1918); Ernest Tisserand, *Pour les finances d'un dictateur* (Paris, 1920).

[50] Helfferich, *op. cit.*, II, 141.

[51] *Livre Noir*, II, 127–28.

[52] Fontaine, *op. cit.*, p. 142. If this writer's statement of the case is accurate, an additional factor of importance seems to be attached to official listing.

Russian ambassador to France, Isvolsky, complained plaintively to his home government that French financiers had more influence over the French government than did the government over the financiers, and that the French bankers frequently evaded government orders by indirect means.[53] It appears that shortly before the outbreak of the war there was a quite general revolt of French banks against the increasing rigidity of government control over their international transactions and especially against a too-officious agent of the foreign office.[54] In 1919 a French bank, the Banque Industrielle de Chine, after having been frozen out of the Consortium because its capital stock was partly owned by Chinese, refused to conform to the request of the French Government that it pool its loan contracts with China in the Consortium.[55]

The German government had before the war two means of exercising formal legal control over foreign loan transactions.[56] By the banking act of 1875 the directorate of the Reichsbank, or central bank, was to consist of the chancellor of the empire and four other members, one appointed by the emperor and the other three by the Bundesrat. Discretion was to rest with the chancellor as to what securities should be accepted for rediscount. The law of 1896 regulating the security exchanges provided that each state could appoint a commissioner of the exchange, with a veto power over its listings. The law laid down the general rule that "issues which endanger a public interest" might be excluded. It provided further that no exchange could

[53] *Livre Noir*, II, 127–28. Cf. also, *ibid.*, I, 233.

[54] In an issue of a National City Bank of New York publication is to be found a statement that early in 1914 a Paris banker was fined $150,000 for an unauthorized participation in a loan to Turkey. "How Strong Governments Back Foreign Enterprises," *The Americas* (November, 1916), p. 1. I have not been able to find any mention of this incident in French sources or any reference to the law providing for such a penalty.

[55] *Far Eastern Review*, XVI, 48–49.

[56] In my discussion of German aspects of the subject I have been greatly aided by the Doctor's dissertation of a former student, Walter H. C. Laves, *German Governmental Influence on Foreign Investments, 1871–1914*, 1927 (MS in University of Chicago Library).

list an issue which had been rejected by another exchange for other than local reasons.[57]

There was only one instance of the use by the chancellor of his power under the Act of 1875. In 1887 Bismarck struck Russian bonds from the list of securities which the Reichsbank could accept as collateral for loans.[58] In 1891, after two German banking houses had negotiated the flotation of a loan for Russia, they withdrew, apparently because they were unable to obtain from the German government an explicit statement that the veto was no longer in operation.[59] In 1894, however, when friendlier diplomatic relations were re-established between Germany and Russia, the veto was lifted and a Russian loan flotation in Germany was permitted.

The veto power over listing on the Bourse was also, apparently, used very sparingly. In 1909 or 1910 the German minister at Belgrade, having learned that Serbia was negotiating a large ordinance contract with a French firm, demanded from the Serbian government a contract with German concerns for railroad material, threatening Serbia, in case of refusal, with a veto of its impending loan in Berlin.[60] In 1910 an Austro-German syndicate underwrote a Bulgarian loan of M. 100,000,000, but the German government expressed disapproval of the loan. The Deutsche Bank then withdrew from participation in the syndicate, but a Hamburg banking house nevertheless proceeded with the flotation of the loan. The Prussian Handelsminister thereupon vetoed its listing on the Berlin Bourse, and in response to a request from the Imperial government, the Hamburg govern-

[57] In 1836 the Prussian government had proclaimed an ordinance forbidding any credit dealings in bonds of the Spanish government, because it had partially repudiated its debt, which was largely held by Prussian investors. In 1840, to check what it regarded as excessive and dangerous speculation, the Prussian government extended its veto to credit transactions in any foreign securities (Richard Ehrenberg, *Die Fondsspekulation und die Gesetzgebung* [Berlin, 1883], pp. 59, 60).

[58] The text of the *Verbot* is given in *Die Grosse Politik der Europäischen Kabinette, 1871–1914* (Berlin, 1922), V, 335.

[59] *Ibid.*, VII, 229.

[60] *Vossiche Zeitung* (January 12, 1900), cited by André Fontaine, *op. cit.*, p. 119.

ment also closed the Hamburg Bourse to the loan. These measures kept the Bulgarian loan out of the German market until 1911, when Bulgaria came to terms with the German government.[61] In 1911 the Prussian Handelsminister forbade the Berlin Bourse to list Chicago, Milwaukee & St. Paul securities, on the ground that the state of the Berlin money market did not permit of the flotation of foreign issues.[62] It has been claimed, however, that the veto was intended as a retaliation against the attitude of the United States in the potash controversy then under way between the two countries.[63]

In March, 1902, a German syndicate under the leadership of Mendelssohn & Company underwrote a Russian loan of M. 393,000,000, which was admitted to the Berlin Bourse. The German Ambassador to Russia called the attention of his government to the loan, and urged that Germany make use of Russia's need for money as a bargaining instrument in the impending tariff negotiations between the two countries. The imperial chancellor, Von Bülow, commented thereon that "it must be seen to that the Jews (Mendelssohn, etc.) consider not only their own purse, but also the interests of the state."[64] The Kaiser expressed his readiness to apply moral and other pressure on Mendelssohn, if necessary, to make him conform in his transactions to the needs of German foreign policy.[65] The government refrained from action, however, in order, apparently, to avoid driving Russia into even firmer alliance with France.

The German government undoubtedly placed more reliance upon its influence over German banking houses as a means of exercising control over their international transactions than on these formal procedures, which involved too much publicity and aroused opposition and debate in the German press, and were

[61] Werner v. Grundherr, *Über die wirtschaftliche und politische Bedeutung der Kapitalanlagen im Auslande* (Griefswald, 1914), p. 76.

[62] *Ibid.*, p. 130.

[63] Alfred Lansburgh, in *Die Bank* (1911), I, 107.

[64] *Die Grosse Politik*, XVIII, 44: "Es muss dafür gesorgt werden, dass die Juden (Mendelssohn u.s.w.) nicht nur an ihren eigenen Beutel, sondern auch an das Staats Interesse denken."

[65] *Ibid.*, p. 45.

not as convenient, diplomatically, as informal control. As Helfferich, a director of the Deutsche Bank, stated: "Heute schon genügt der leiseste Wink, um die Emission einer unseren politischen Interessen widersprechenden Anleihe zu verhindern."[66] A number of instances are known of declarations to the bankers of official disapproval of projected foreign loan flotations. Reference has already been made to the German government's notice to the bankers of its disapproval of the 1910 Bulgarian loan project. In 1898 Germany and Austria both declared a diplomatic veto against loans to Bulgaria, at the request of Von Siemens, of the Deutsche Bank, who wanted to prevent Bulgaria from proceeding with a railway project which would be competitive with one of his own.[67] In 1906 the German government forbade German bankers to participate in the flotation of a Russian loan, although the right to float a loan in Germany had been one of the considerations granted to Russia in the understanding of 1904, settling the points at issue between the two countries.[68] It is interesting to note that Mendelssohn & Company informed Witte that they had secretly subscribed to the Russian loan through their non-German branches, in spite of the governmental veto.[69]

I have been unable to discover whether it was a regular practice of the German bankers to consult the German foreign office before undertaking to float loans for foreign governments, and I have found only one reported instance of such consultation. In 1886 Von Siemens, of the Deutsche Bank, before underwriting a Bulgarian loan, asked the foreign office if it had any objection to the loan.[70]

Information as to the methods used by other European governments before the war to prevent the flotation in their money

[66] *Bank-Archiv* (April 15, 1911), p. 215. Cf., to much the safe effect, Grundherr, *op. cit.*, p. 132.

[67] Helfferich, *Von Siemens*, II, 11.

[68] Sartorius von Waltershausen, *Das volkswirtschaftliche System der Kapitalanlage im Auslande* (Berlin, 1907), p. 314, note; Grundherr, *op. cit.*, p. 74; *Memoirs of Count Witte*, p. 304.

[69] *Memoirs of Count Witte*, p. 306.

[70] Helfferich, *Von Siemens*, II, 6.

markets of foreign loans to which they objected is scanty. In both Austria-Hungary and Russia listing on the Bourse was subject to approval by the Minister of Finance, and in Russia a formal permit from the government was required preliminary to the flotation of a foreign issue. But Russia had insufficient capital resources for its own use, and such restrictive influence as it found the opportunity to exercise was mainly over the French market by applying pressure to the French government or by bribing the French press. In connection with the Turkish Bagdad Railway loans, Russian diplomacy was a factor also in securing their exclusion from the London market. Foreign loans are not at present permitted in Italy, Belgium, and Spain, unless special permission has been received from the government.[70a]

Before 1914 the United States was in the balance a debtor country, and foreign government loan issues in the United States were rare. During the Taft administration there was initiated what seems now to have become the established policy of the United States, namely, to use American capital resources as an instrument of governmental foreign policy. But until after the war there was little opportunity to apply restrictions to the flotation of foreign loans in this country in the execution of this policy, and the one instance of this character which can be cited was the participation by American bankers, under official auspices, in the Chinese Consortium. One of the provisions of the Consortium agreement was that the governments of the participating syndicates should withhold diplomatic support from any loan made to China by non-member banks. In the United States, however, as in England and in France, a banking house disregarded the official recognition of a monopoly of the privilege of making loans to China, and in the face of state department disapproval made an independent loan.

The United States government has no statutory peace-time authority to interfere with the flotation of foreign loans in this

[70a] Ancient parallels of these modern controls could probably be cited by classical historians. One such has come to my attention. In 56 B.C. the Roman Senate prohibited Italians from lending their money outside of Italy, in order to keep their capital within the peninsula and thus to lower the prevailing rates of interest, to the advantage of the debtor classes (Guglielmo Ferrero, *The Greatness and Decline of Rome* [New York, 1907], II, 27).

country, and there might be constitutional difficulties in the way of establishing such authority, especially if it were discretionary in character. Under existing conditions, in any case, any restrictive control must be administrative and extra-legal in character. The post-war attempt at control dates from a conference of May 25, 1921, between President Harding and some members of his Cabinet on the one hand, and a number of American investment bankers on the other, at which the President expressed his desire that the government be kept informed regarding contemplated public flotations of foreign bond issues in the American market, "so that it might express itself regarding them if that should be requested or seem desirable." This did not obtain the desired degree of response from the bankers, and on March 3, 1922, the state department sent a circular letter to American investment bankers, repeating the request, and stating that although "the Department of State cannot, of course, require American bankers to consult it . . . . [it] believes that in view of the possible national interests involved it should have the opportunity of saying to the underwriters concerned, should it appear advisable to do so, that there is or is not objection to any particular issue.[71]

There have been varying interpretations from different branches of the government with respect to the interpretation of this circular letter and the action taken in conformity with it. On April 8, 1925, the "Administration Spokesman asserted emphatically that the Government had never attempted to 'supervise' foreign loans floated in the United States," and gave his hearers the impression that the only purpose of the circular was to secure information for the government.[72] President Coolidge later stated that "the Government is doing as little as possible to dictate a policy in this connection."[73] But Secretary Kellogg had previously explained that the purpose of the circular was to obtain for the government an opportunity to state "whether it believed certain loans were not in the public interest," and stated

[71] *Commercial and Financial Chronicle*, May 28, 1921; state department press release, March 3, 1922.

[72] *New York Times*, April 9, 1925.

[73] *Ibid.*, January 22, 1927.

the grounds on which the state department had objected to a number of projected loans.[74] In October, 1927, in reply to an attack by Senator Glass on its exercise of control over foreign loans, the state department explained that "bankers are under no legal obligation to follow the Department's wishes in case a loan does not meet with its approval, and there is no obligation on the part of the bankers, tacit or otherwise, to seek the opinion of the Department," while President Coolidge interpreted the practice of the state department as merely advisory, and consisting only of inquiring whether the proposed loan would interfere with the foreign policy of the government; unless some such plan was followed, he warned that Congress might enact a drastic regulatory law. If senators were fully acquainted with the circumstances, according to the state department, they would consider "the very limited control exercised by the Department of State as beneficial."[75] In any case, a control does prevail.

Early in 1925 the "Administration Spokesman indicated that there was no truth in the reports that it had frowned upon the effort of France to raise money in this country."[76] But the financial press was repeatedly referring to a state-department veto against loans to France, and later in the same year Secretary Kellogg stated that the state department "has objected to loans to countries which had not settled their debts to the United States."[77] In October, 1927, while tariff negotiations were under way with France, the state department announced that it would not object to the refunding by France at a lower rate of its 8 per cent 1920 American loan; "This refunding transaction involves no advance of new money to France."[78] On January 13, 1928, the state department notified American bankers that the ban against French industrial loans had been lifted,[79] and a few days later inquirers at the treasury were given to understand that the

[74] *Ibid.*, December 15, 1925.

[75] *United States Daily*, October 15, 1927; *Commercial and Financial Chronicle* (October 22, 1927), p. 219.

[76] *New York Times*, April 9, 1925.

[77] *Ibid.*, December 15, 1925.

[78] *Commercial and Financial Chronicle* (October 15, 1927), p. 2017.

[79] *New York Times*, January 15, 1928.

ban against French government loans would probably be lifted also if request was made."[80]

The original state-department circular referred only to "the public flotation of issues of foreign bonds in the American market," and in practice the government vetoes of projected loans are interpreted by the bankers as applying only to their underwriting and original public sale. This limitation has made the government attempt at control so ineffective that even the conservative press mock at it. The veto, for instance, against public issues of French loans has been respected *pro forma*. But American banks have bought French bonds issued in Holland at the original underwriters' terms and then distributed them privately among their clients; they have accumulated bonds of *old* French issues and made a public offering of them in this country; they have participated in underwriting syndicates for French loans through their foreign branches and agencies.[81] After an American flotation of a Sao Paulo coffee valorization loan had been vetoed, it was transferred to London. An American investment house bought up a large share of the London issue and advertised it for sale in New York. "Bankers said that thus the only effect of the ban on an original offering here was that American investors paid higher prices for the bonds than would otherwise have been the case."[82]

It appears that at times the state department has not confined itself to vetoes of particular projects submitted to it for approval, but has allowed it to be understood that loans of a particular kind would be disapproved. Thus there has been a general veto of the flotation of French loans, irrespective of whether these were French government loans or the bond issues of private French industrial corporations. Against public flotation of loans to Russia the excommunication is complete. A high official of the state department, W. R. Castle, has stated categorically that "if any banker should consult the Department of State as to a loan to the Soviet Government of Russia the answer would be

[80] *Ibid.*, January 17, 1928.

[81] *Ibid.*, February 3, 1927; May 15, 1927.

[82] *Ibid.*, February 18, 1926; March 12, 1926. For an advertisement of the Sao Paulo issue, see *ibid.*, February 17, 1926.

a prompt refusal."[83] Even loans to other countries, if their proceeds were to be used to finance the trade of those countries with Russia, come under the state-department ban, and in 1926 a project of an American financier, W. A. Harriman, to float a loan to Germany to finance German exports to Russia was abandoned after the state department had announced its disapproval of it.[84] Later it made formal objection to the Chase National Bank of New York acting as an agent in the payment of interest and retirement charges on a Soviet issue of railroad bonds to be sold in the United States by private sale, and the bank promised not to act in this capacity.[85] On the other hand, in the case of Sao Paulo, after the state department had vetoed a Sao Paulo coffee valorization loan, it let it be known that there were no objections to loans to Sao Paulo that were not concerned with coffee-price stabilization,[86] thus differentiating, not only as between countries, or between private and government loans, but as between different loans by the same government.

JACOB VINER

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[*To be continued*]

[83] *Ibid.*, July 31, 1925.

[84] *Ibid.*, April 11, 1926.

[85] *Ibid.*, January 31, 1928; February 2, 1928; February 15, 1928. In announcing its action the state department said: ". . . . The department does not view with favor financial arrangements designed to facilitate in any way the sale of Soviet bonds in the United States" (*ibid.*, February 2, 1928).

[86] *Ibid.*, March 12, 1926.

THE TREND OF PERSONAL AUTOMOBILE ACCIDENTS

INTRODUCTION[1]

THE automobile as an instrument of injury and death is responsible for one of the most significant groups of personal risks existing in our present age. Everyone is subjected to a considerable amount of uncertainty in regard to loss or damage arising out of the possibility of automobile accidents. Often this uncertainty is turned into a certainty, and this means the loss of life or limb, of productive energy for the social group, and of income, sometimes livelihood, for the persons involved. In recent times fatalities due to the automobile have been playing a very important rôle in mortality tabulations, and non-fatal automobile injuries have been the largest single figure on casualty lists.

To meet this rather alarming situation, attention has been given mainly to the development of means of preventing automobile accidents. Safety educational movements, improved highways, the development of effective automobile control mechanisms, driving and traffic regulations are some of the ameliorative measures that have been taken in the direction of prevention.

[1] See: reports of the Hoover Committee on Statistics of the National Conference on Street and Highway Safety, November 3, 1924, and February 1, 1926; reports of the Statistics Committee of the National Safety Council (Chicago) for the years 1925, 1926, and 1927; William J. Cox, "Automobile Hazard in Cities and Its Reduction," *Proceedings of the American Society of Engineers* (April, 1927), 513–39; Major P. Granville Edge, "The Growth of Mortality Due to Motor Vehicles in England and Wales, 1904–23," *Journal of the Royal Statistical Society*, XXCIX, No. 3 (May, 1926), 405–51; Horace Secrist, "Automobile, Motor-Truck, and Motor-Cycle Street Accidents in Chicago," *Journal of the American Statistical Association*, XVI, No. 128 (December, 1919), 512–32; Lee K. Frankel, "The Increasing Automobile Hazard," address delivered before the Association of Life Insurance Presidents at New York, December 7, 1917 (Betterment of Life Insurance Service).

Up to the present time, however, the eliminating influences of these preventive measures have been much more than completely counteracted by the forces tending to increase automobile accidents. Fatalities have been consistently climbing at a rapid rate from year to year and non-fatal automobile injuries have been mounting at a very high rate. On the basis of all present indications this tendency probably will continue.

An investigation of the trend of personal automobile accidents supports this contention. The results of a study of automobile fatalities, automobile non-fatal injuries, and the relation of each to changes in population and in motor car registration are presented in the following pages.

THE MOUNTING COURSE OF AUTOMOBILE FATALITIES[2]

According to the National Automobile Chamber of Commerce's figures,[3] during the period between 1917 and 1926, inclusive, the annual automobile fatalities steadily increased from approximately 9,097 to 20,819. The automobile, in other words, was responsible for considerably more than twice as many deaths in 1926 as in 1917.

For this nine-year period the trend shown by these National Automobile Chamber of Commerce data appears to be of the nature of a compound interest curve. Automobile fatalities appear to have increased from year to year, not merely by a constant absolute increment, but by a constant percentage. These figures indicate, therefore, that each new year brought forth, aside from peculiar variations, approximately the same relative increase in automobile fatalities.

This interesting tendency was discovered after both a straight line and a compound interest curve were fitted to the data. Although both curves appeared to fit the data fairly well,

[2] See Table I for the complete data. Chart I shows these facts diagrammatically. Automobile fatalities are defined here as those fatalities arising out of an accident in which the automobile is the heaviest vehicle involved. This definition, therefore, excludes a street car–automobile accident, a railroad–automobile accident, etc.

[3] These figures are based on the data gathered by the United States Bureau of Census.

TABLE I

ESTIMATED AUTOMOBILE FATALITIES IN THE UNITED STATES, 1917–26
(BUREAU OF CENSUS DEFINITION OF AUTOMOBILE FATALITIES)

YEAR	ACTUAL AUTOMOBILE FATALITIES* (UNIT, 100 FATALITIES)	CALCULATED AUTOMOBILE FATALITIES (STRAIGHT LINE PROJECTION BY METHOD OF LEAST SQUARES)† (UNIT, 100 FATALITIES)		CALCULATED AUTOMOBILE FATALITIES (STRAIGHT LINE PROJECTION OF LOGARITHMS BY METHOD OF LEAST SQUARES)‡ (UNIT, 100 FATALITIES)	
	N.A.C. Data				
1917	91.0	74.4		84.8	
1918	94.6	89.0		93.9	
1919	98.2	103.6		104.0	
1920	110.7	118.2		115.1	
1921	123.7	132.9	123.8	127.5	126.0
1922	136.8	147.5	141.4	141.8	140.3
1923	164.5	162.1	159.1	156.3	156.3
1924	175.7	176.7	176.7	173.1	173.8
1925	198.3	191.3	194.3	191.7	194.0
1926	208.2	205.9	211.9	212.3	216.2
1927	.....	*220.5*	*229.6*	*235.1*	*240.9*
1928	.....	*235.1*	*247.2*	*260.3*	*268.4*
	Nerlove-Graham Data				
1921	110.5	110.1		112.7	
1922	124.4	127.8		126.9	
1923	149.0	145.6		142.8	
1924	163.2	163.4		160.8	
1925	183.3	181.1		180.9	
1926	196.6	198.9		203.6	
1927	.....	*216.6*		*229.2*	
1928	.....	*234.4*		*258.0*	

* N.A.C. data: This series of data was taken from the records of the National Automobile Chamber of Commerce. This organization probably obtained these figures from the United States Bureau of Census (see *Facts and Figures of Automobile Industry* [1927], p. 58). The figures for 1917 to 1924, inclusive, agree with the data presented by the Hoover Committee on Statistics of the National Conference on Street and Highway Safety (see *Report of the Hoover Committee on Statistics* [Washington, D.C., 1926], p. 13). According to the table presented by this Committee, the data for 1917–24 were taken from the records of the Department of Commerce, United States Bureau of Public Roads, and National Automobile Chamber of Commerce. The National Safety Council issued the following figures on fatal automobile accidents: 20,147 for 1926, 19,614 for 1925, 17,838 for 1924, 16,489 for 1923, and 2,061 for 1911 (see *Accident Facts* [1927], p. 6). The National Automobile Chamber of Commerce's figures were used because they were the longest available series. It is worth noting that the National Safety Council figures do not agree with the series chosen, even though both base their figures on the data gathered by the United States Bureau of Census.

Nerlove-Graham data: These data were obtained, in the main, directly from state departments (see Table II in Appendix).

† N.A.C. data: Standard deviation of calculated automobile fatalities from actual data for the period 1917–26, inclusive, equals 806 fatalities. Standard deviation of calculated automobile fatalities from actual data for the period 1921–26, inclusive, equals 371 fatalities.

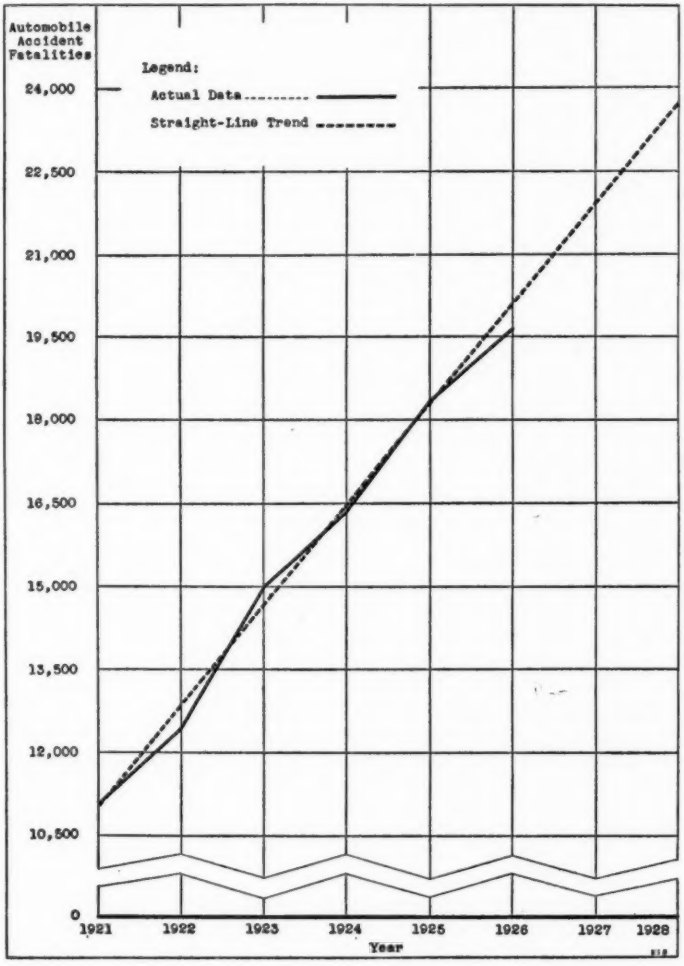
Nerlove-Graham data: Standard deviation of calculated fatalities from actual data equals 238 fatalities.

‡ N.A.C. data: Standard deviation of calculated automobile fatalities from actual values for the period 1917–26, inclusive, equals 508 fatalities. Standard deviation of calculated automobile fatalities from actual data for the period 1921–26, inclusive, equals 533 fatalities.

Nerlove-Graham data: Standard deviation of calculated fatalities from actual data equals 430 fatalities.

CHART I

TREND OF AUTOMOBILE ACCIDENT FATALITIES IN THE UNITED STATES, 1921–28
(BASED ON ACTUAL DATA COMPILED FOR THE SIX YEARS 1921–26)



the compound interest curve seemed to represent the drift of the data more accurately than the other.[4]

The straight line fit for the ten-year period indicates a constant annual increase of approximately 1,460. If we were to assume that this shows the accurate tendency, the figures for 1927 probably will show a death toll of more than 22,000 over against 20,800 in 1926, and during 1928, at this rate of increase, there will be over 23,500 automobile fatalities.

The situation, however, appears to be much worse. The compound interest curve, which affords a closer fit to the actual data, indicates that during the nine-year period between 1917 and 1926 these fatalities have been constantly increasing at an annual rate of approximately 10.7 per cent. Since there were no material changes in conditions affecting automobile fatalities during 1927, the figures for that year probably will show an automobile mortality of 23,500. This figure is 1,500 larger than the one predicted on the basis of a straight line. Forecasting on the basis of this compound interest curve line, 1928 holds in store about 26,000 automobile fatalities. It is interesting to note in this connection that if this trend continues the automobile fatalities will double every seven years.

Some evidence exists, however, that this compound interest curve trend will not be representative of the underlying tendency in the near future. A straight line trend and a compound interest curve trend were fitted to the data for the period 1921–26, inclusive. For this period it was found that the straight line shows the changes in automobile fatalities more accurately than

[4] A rough measure was taken of the dispersion of the actual data about both of the lines fitted. About the straight line the standard deviation was approximately 806 fatalities, determined by taking the square root of the sum of the squared deviations divided by the number of observations. About the logarithmic line the standard deviation was 508 fatalities, determined by taking the square root of the squared deviations divided by the number of observations. In view of the fact that the methods of fitting the curves in both instances are not comparable (in the first case the curve fitting was done in terms of actual observations, whereas in the second case it was done in terms of the logarithms of the actual observations), it is not entirely accurate to compare these two measures of dispersion. Nevertheless, the data is of a character that makes such a comparison almost accurate. On the basis of this statistical criterion, therefore, the compound interest curve trend line represents more adequately than the straight line the central tendency of the data on automobile fatalities.

the other curve. This seems to indicate that in recent times the rate of increase has been declining, that automobile fatalities have been increasing at the rate of a constant increment rather than a constant percentage. This increment for the five-year period was approximately 1,760 per annum. It is worth noting that this rate of increase is more than 300 per annum larger than the one indicated by the straight line fitted to the ten observations.

In order to insure as high a degree of accuracy as possible in the attempt to determine the trend of automobile fatalities, data on automobile fatalities were gathered directly from state departments covering a period of six years, 1921–26, inclusive. It was found that the data so gathered indicated a lower annual automobile mortality rate than those assembled by any of the other gatherers of mass data on automobile fatalities: the National Safety Council, the National Automobile Chamber of Commerce, and the Hoover Committee on Statistics of the National Conference on Street and Highway Safety,[5] but that the discernible trend was practically in complete accord with that shown by our data.

According to our data, during 1921 there were approximately 11,050 automobile fatalities. By 1926, the number was increased to 19,660. According to these figures, therefore, the annual death toll of the automobile has increased about 78 per cent within a half decade.

To these data covering the period between 1921 and 1926, both a straight line and a compound interest curve were fitted. It was found that a straight line probably is the more representative of the two trend measures of the underlying variations in the data.[6]

[5] All of these groups relied primarily, and in some instances entirely, on the data gathered by the United States Bureau of Census.

[6] The standard deviation about the straight line was 238 fatalities; about the logarithmic line it was 430 fatalities. Again it should be noted that these two measures are not strictly comparable, because one trend line was determined in terms of actual observations, whereas the other was in terms of the logarithms of the actual observations. Nevertheless, for present purposes and in view of the data, this comparison is sufficiently accurate and shows that the straight line affords a closer fit than the compound interest curve line.

On the basis of the straight line trend the constant annual increase is estimated at approximately 1,775. Interestingly enough, this figure is almost equal to the one indicated by the National Automobile Chamber of Commerce data. If this is an accurate indication of the trend, our figures show that the automobile death toll will be about 21,650 during 1927, and probably 23,440 in 1928.

If, as the data seem to indicate, in the last five years of the period between 1917 and 1926, inclusive, the rate of annual increase in automobile fatalities has tended to decline, the predictions just made and those made on the basis of the straight line method applied to the National Automobile Chamber of Commerce figures for 1921–26 are probably more accurate than those determined on the basis of the logarithmic trend line fitted to the ten-year period.

Nevertheless, it is worth noting what is shown by the compound interest curve fitted to our data. After all, the determination of a trend line is in the last analysis a subjective matter, and it is possible that the compound interest curve is the better of the two lines fitted to the data. The straight line fitted to the logarithms of the data indicated a constant percentage increase of approximately 12.5 per cent. This figure is considerably larger than the one shown by the compound interest curve fitted to the National Automobile Chamber of Commerce data. If this rate of increase continued, during 1927 there probably were 22,900 automobile fatalities, and 1928 holds in store over 25,800. Without material changes in the conditions affecting these fatalities, the 12.5 per cent rate of annual increase means a doubling of automobile deaths every six years.

In view of the meagerness of the data and the more or less arbitrary manner in which one is forced to determine a trend, it is, of course, impossible to draw any dogmatic conclusions from the foregoing data. The two sets of figures, however, indicate quite conclusively that up to the present time, as far as vital statistics are concerned, automobile fatalities have not responded to the ameliorative measures being employed; these fatalities have been steadily climbing. Furthermore, the data seems to show that on the basis of the nine-year period 1917–26, fatalities

due to the automobile have been increasing geometrically at a constant rate of about 10.7 per cent. On the basis of the five-year period 1921–26, however, the trend seems to be somewhat different. Instead of increasing geometrically, these fatalities appear to be increasing arithmetically by a constant absolute amount of approximately 1,770.[7] Perhaps this change in trend is evidence that the preventive measures now being employed are overcoming slightly the forces tending to increase automobile fatalities.

THE MOUNTING COURSE OF AUTOMOBILE NON-FATAL INJURIES[8]

Unfortunately, the data in regard to non-fatal automobile injuries[9] are even more meager than the available data on automobile fatalities. Only a few states gather figures on non-fatal injuries. In order to estimate their number it was necessary to resort to the device of determining wherever possible the ratio of non-fatal injuries to fatalities for a given period of time. Then, by applying this ratio to the total fatalities, an estimate was made of the total non-fatal injuries. This method quite evidently is a precarious one, but it appeared to be the most adequate available.

Using this rather hazardous method, it was found for the five-year period between 1921 and 1926 that the ratio of non-fatal automobile injuries to automobile fatalities increased from roughly 19.06 to more than 36.9.[10] There were almost twice as

[7] On the basis of the straight line trend of our data for the years 1921–26, the constant annual increase is approximately 1,775. For the same period the straight line trend of the National Automobile Chamber of Commerce data indicate a constant annual increase of 1,760. The arithmetic average of these two figures is 1,770, a fairly accurate measure of the average constant increment based on the two sets of data combined.

[8] See Table III for complete data. Chart II shows these facts diagrammatically.

[9] Automobile non-fatal injuries are usually defined as those injuries of a somewhat serious nature arising out of accidents in which the automobile is the heaviest vehicle involved. It is evident, therefore, that data on automobile non-fatal injuries are likely to be grossly inaccurate.

[10] See Table II. The Hoover Committee on Statistics of the National Conference on Street and Highway Safety used a ratio of 30 to 1 in their 1924 report covering mainly 1922 and 1923, and 25 to 1 in their 1926 report covering 1924.

TABLE II

Estimated Ratio of Non-Fatal to Fatal Automobile Injuries in the United States, 1921–26

Year	Number of States Determining the Ratio*	Ratio of Non-fatal Automobile Injuries to Automobile Fatalities†
1921	2	19.58:1
1922	3	25.24:1
1923	3	24.29:1
1924	3	26.21:1
1925	4	29.23:1
1926	5	32.49:1
1927	1	36.92:1

* The states used in obtaining the ratio for the various years were as follows: Massachusetts and Connecticut in 1921; Massachusetts, Connecticut, and Vermont in 1922; Massachusetts, Connecticut, and Vermont in 1923; Massachusetts, Connecticut, and Vermont in 1924; Massachusetts, Connecticut, Vermont, and New York in 1925; Massachusetts, Connecticut, Vermont, New York, and Oregon in 1926; New York in 1927.

† It may be that this ratio has been increasing primarily because of the development of machinery for collecting data on automobile fatal accidents. If this is so, the figures shown are mainly an "index" of more accurate reporting of automobile accidents.

TABLE III

Estimated Non-Fatal Automobile Injuries in the United States 1921–26

Year	Nerlove-Graham Data on Automobile Fatalities* (Unit, 100 Fatalities)	Ratio of Non-Fatal Injuries to Fatalities†	Estimated Non-Fatal Automobile Injuries‡ (Unit, 1,000 Non-Fatal Injuries)	Calculated Non-Fatal Automobile Injuries (Straight Line Projection by Method of Least Squares)§ (Unit, 1,000 Non-Fatal Injuries)	Calculated Non-Fatal Automobile Injuries (Straight Line Projection of the Logarithms of the Data by the Method of Least Squares)‖ (Unit, 1,000 Non-Fatal Injuries)
1921	110.5	19.58:1	216.3	211.9	234.3
1922	124.4	25.24:1	313.9	293.4	287.7
1923	149.0	24.29:1	362.0	375.0	353.2
1924	163.2	26.21:1	427.7	456.5	433.7
1925	183.3	29.23:1	535.7	538.0	532.6
1926	196.6	32.49:1	638.8	619.6	650.9
1927	.....	36.92:1	.....	*701.1*	*803.0*
1928	.....	.....	.....	*782.6*	*985.9*

* See Table I.

† See Table II.

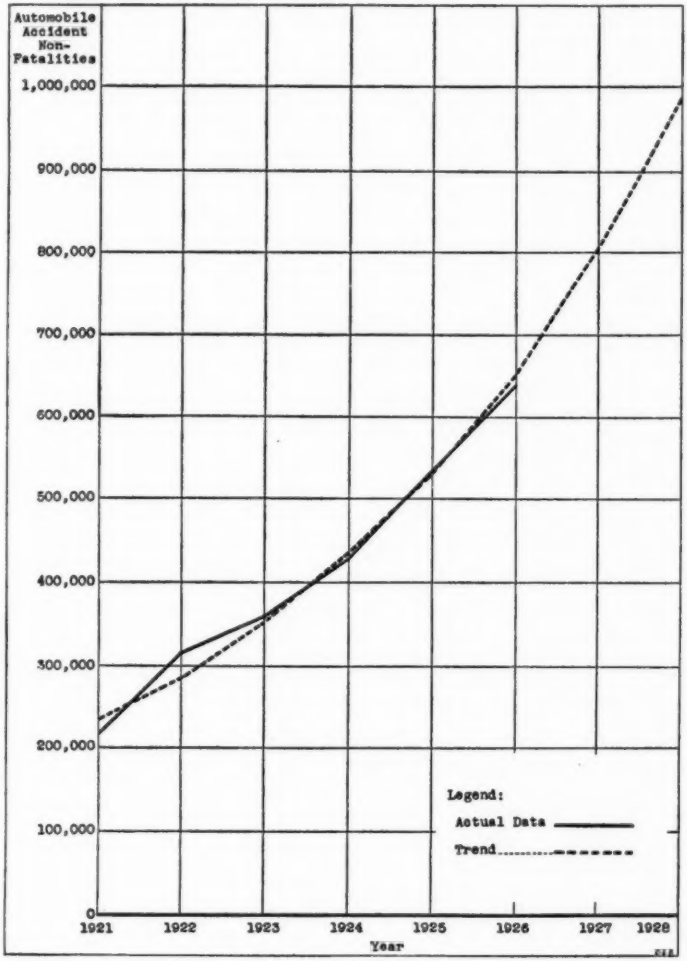
‡ This series was obtained by applying the ratio of non-fatal automobile injuries to automobile fatalities.

§ Standard deviation of the calculated non-fatal automobile injuries from the actual values equals 17,400 non-fatal injuries.

‖ Standard deviation of the calculated non-fatal automobile injuries from the actual values equals 14,600.

CHART II

TREND OF AUTOMOBILE ACCIDENT NON-FATAL INJURIES IN THE UNITED STATES 1921–28 (BASED ON ESTIMATED DATA FOR THE SIX YEARS 1921–26)



many non-fatal injuries per one fatality in 1926 as there were in 1921. The ratio increased steadily, with one exception, from year to year, at a constant rate of increase of approximately 11 per cent. A possible explanation of this rather significant trend may be in the fact that as areas become more congested the traffic tends to move more slowly and consequently accidents are less likely to result in fatalities.[11]

These ratios were applied to our fatality data and the results obtained showed an even more striking trend upward than the automobile fatality record. It is estimated that in 1921 there were approximately 216,300 non-fatal injuries. Since then there has been a steady increase each year. During 1926 it is estimated that there were 638,800. In other words, non-fatal injuries almost trebled within a period of a half-decade.

As in the case of automobile fatalities, in attempting to determine the underlying trend of these non-fatal accidents both a straight line and a compound interest curve were fitted to the data. In this instance, however, it was found that the compound interest curve fitted the figures more accurately than the straight line.[12]

According to the straight line trend, these automobile non-fatal injuries have been increasing at the constant rate of approximately 81,530 per year. On this basis the 1927 figures would show more than 701,000 non-fatal injuries, and during 1928 there probably will be more than 782,500 such casualties.

A more accurate measure of the trend line—the straight line

[11] Probably the development of machinery for gathering non-fatal automobile injury data also tended to increase the indicated ratio of non-fatal injuries to fatalities. Whether or not this be true, the significant fact remains that the ratio of the *reported* non-fatal injuries to the *reported* fatal injuries is increasing.

[12] The standard deviation about the logarithmic curve was 14,600 non-fatal automobile accidents; the standard deviation about the arithmetic curve was 17,400 non-fatal automobile accidents. These two figures are not entirely comparable because of the different methods used in fitting the trend line. In one case a straight line was fitted, so that the absolute deviations squared would be at a minimum; in the other instance a straight line was fitted so that the logarithms of the deviations squared would be at a minimum. These standard deviations are, however, sufficiently comparable to indicate that the logarithmic trend line is more indicative of the underlying variations in automobile non-fatal injuries than the arithmetic trend line.

fitted to the logarithms of the data[13]—indicates a much more serious situation than the one just presented. The rate at which these non-fatal injuries have been constantly increasing from year to year is considerably over 23 per cent. On this basis the 1927 figures will probably show a casualty list of about 803,000, and 1928 probably will bring with it approximately 986,000 such injuries. These prognostications, of course, are being made on the assumption that the logarithmic trend line is accurate and that there will be no significant changes in conditions affecting automobile accidents in the near future.

It is even more difficult in the case of these non-fatality figures than it was in connection with the fatalities to make any fundamental generalizations. The data are probably too meager and are perhaps based on rather questionable assumptions for such a purpose. Nevertheless it is clearly evident that non-fatal injuries as well as fatalities have been defying the preventive measures that have been adopted. The forces tending to increase non-fatal automobile injuries have been much more influential than those tending to decrease these injuries. Furthermore, the data for the five-year period between 1921 and 1926 seem to indicate that non-fatal injuries were increasing at the rate of over 23 per cent per annum, a rate of increase which will mean more than a doubling of the non-fatal casualty list every three and one-half years.

AUTOMOBILE FATALITIES AND NON-FATAL INJURIES RELATED TO POPULATION[14]

When the automobile fatalities and non-fatal injuries are related to population it is found that they have been increasing much more rapidly than population. The resulting ratios indicate a trend which is very similar to the one shown by the unrelated data.

According to our data on automobile fatalities, there were more than 10 people killed per 100,000 population during 1921. During 1926 there were almost 17 per 100,000 population.

[13] This trend was determined to be the most accurate by the method described on p. 178, note 4.

[14] See Tables IV and V for complete data. Charts III and IV show these facts diagrammatically.

TABLE IV

ESTIMATED AUTOMOBILE FATALITIES PER 100,000 POPULATION IN THE UNITED STATES, 1921–26

(BUREAU OF CENSUS DEFINITION OF AUTOMOBILE FATALITIES)

Year	Mid-Year Population* (Unit, 1,000)	Automobile Fatalities per 100,000 Population†	Calculated Automobile Fatalities per 100,000 Population on Basis of Our Data (Straight Line Projection by Method of Least Squares)‡	Calculated Automobile Fatalities per 100,000 Population on Basis of Our Data (Straight Line Projection of Logarithms of the Data by Method of Least Squares)§
1921	108,445	10.2	10.2	10.3
1922	109,893	11.3	11.6	11.5
1923	111,693	13.3	13.0	12.7
1924	113,727	14.3	14.3	14.2
1925	115,378	15.9	15.7	15.7
1926	117,136	16.8	17.0	17.5
1927	.....	.....	*18.4*	*19.4*
1928	.....	.....	*19.8*	*21.6*

* These figures are taken from the 1926 *Statistical Abstract of the United States Census*, p. 3.

† See Table I.

‡ Standard deviation of calculated figures from actual values equals .366 automobile fatalities per 100,000 population.

§ Standard deviation of calculated figures from actual data equals .353 automobile fatalities per 100,000.

TABLE V

ESTIMATED NON-FATAL AUTOMOBILE INJURIES PER 100,000 POPULATION IN THE UNITED STATES, 1921–26

Year	Mid-Year Population* (Unit, 1,000)	Non-Fatal Automobile Injuries per 100,000 Population†	Calculated Non-Fatal Automobile Injuries per 100,000 Population on Basis of Our Data (Straight Line Projection by Method of Least Squares)‡	Calculated Non-Fatal Automobile Injuries per 100,000 Population on Basis of Our Data (Straight Line Projection of Logarithms of the Data by Method of Least Squares)§
1921	108,445	199	229	216
1922	109,893	286	284	261
1923	111,693	324	338	316
1924	113,723	376	393	382
1925	115,378	464	458	462
1926	117,136	545	503	558
1927	.....	.....	*558*	*675*
1928	.....	.....	*612*	*816*

* These figures are taken from the 1926 *Statistical Abstract of the United States Census*, p. 3.

† See Table III.

‡ Standard deviation of calculated figures from actual values equals 22.79 non-fatal automobile injuries per 100,000 population.

§ Standard deviation of calculated figures from actual values equals 13.8 non-fatal automobile injuries per 100,000 population.

CHART III

RATIO TREND OF AUTOMOBILE FATALITIES PER 100,000 POPULATION IN THE UNITED STATES, 1921–28 (BASED ON ESTIMATED FATALITIES FOR THE SIX YEARS 1921–26)

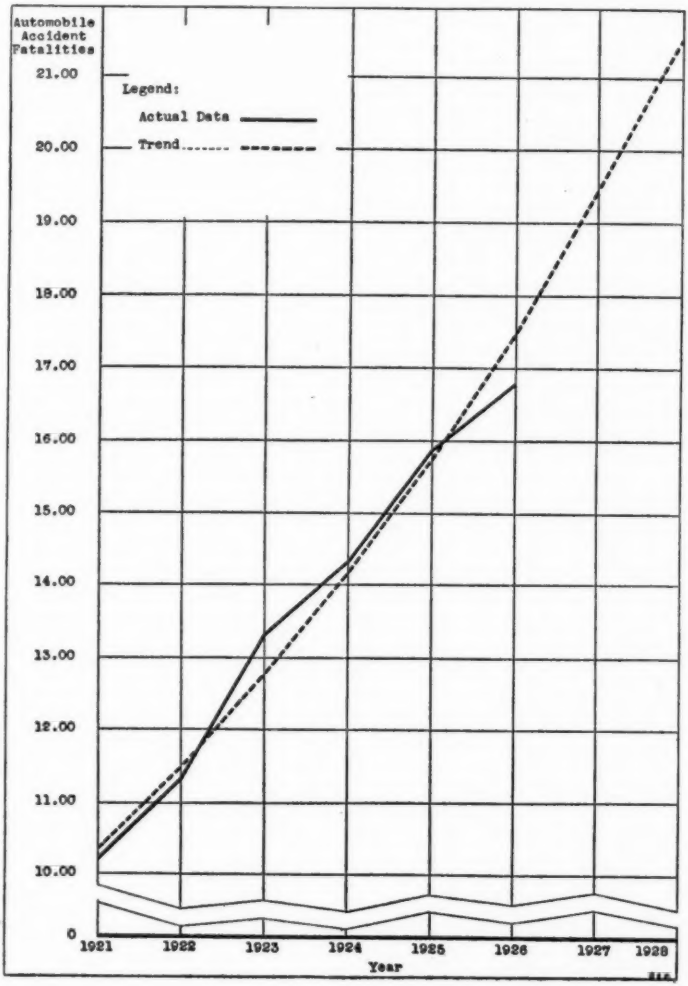
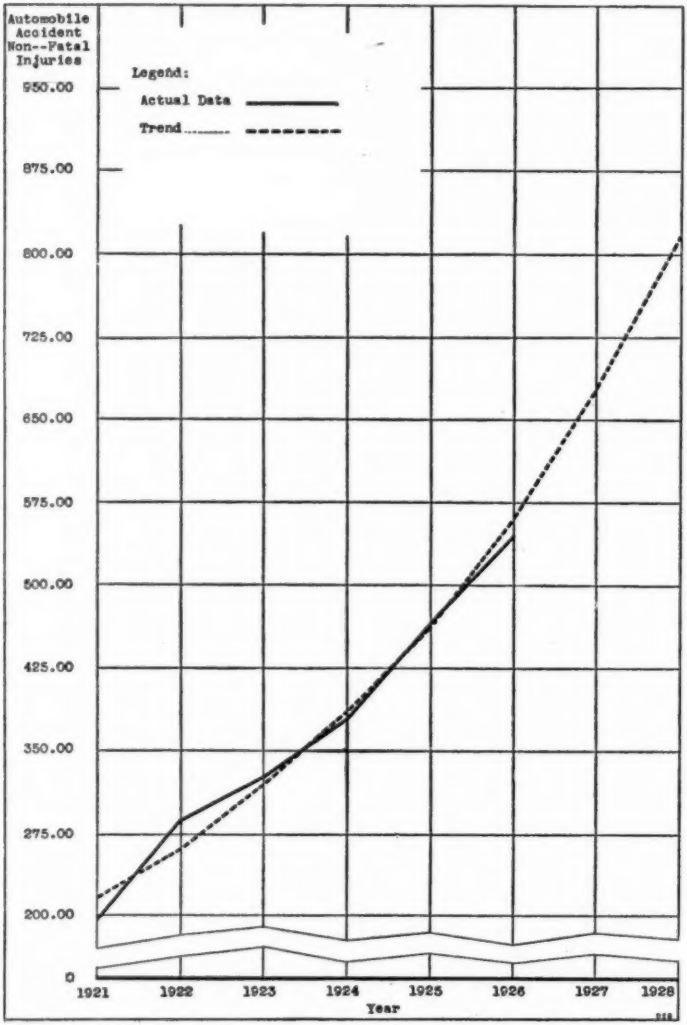


CHART IV

RATIO TREND OF AUTOMOBILE ACCIDENT NON-FATAL INJURIES PER 100,000 POPULATION IN THE UNITED STATES, 1921–28 (BASED ON ESTIMATED NON-FATAL INJURIES FOR THE SIX YEARS 1921–26)



Both a straight line and a compound interest curve appear to fit closely the data on the rate of fatalities per 100,000 population. In so far as there is a choice between the two trend lines, however, it appears to be in favor of the compound interest curve. In other words, the data seem to indicate that the rate of persons killed per 100,000 has been increasing on a constant percentage basis.

The straight line trend for the five-year period between 1921 and 1926 indicates that the automobile fatalities per 100,000 population tended to increase from year to year at the rate of 1.36. At this rate probably more than 18 people per 100,000 population were fatally injured in 1927, and 1928 will have a record of almost 20 fatalities per 100,000.

If the underlying growth of this ratio has been of the compound interest curve character, the data indicate that the rate of increase has been at the constant annual rate of approximately 11 per cent. On this basis, during 1927, more than 19 people per 100,000 were killed, and during 1928 there will be more than 21 per 100,000.

A similar but more striking trend is evident in the data on non-fatal automobile injuries related to population. According to the available data the automobile was responsible for approximately 200 injuries per 100,000 population during 1921. During 1926 this ratio was over 545 per 100,000, indicating an increase of over 173 per cent within a five-year period.

A fairly close fit is afforded by a straight line. On this basis the constant annual increase was almost 55 fatalities per 100,000 population. During 1927, then, the ratio was probably over 557, and during 1928 it will be over 612.

Probably a more accurate indication of the trend, however, is shown by the logarithmic curve.[15] It appears that the rate of non-fatal automobile injuries per 100,000 population has been increasing at an annual constant rate of about 20.8 per cent. On this basis during 1927 almost 675 people per 100,000 population were injured by the automobile, and during 1928 there probably will be almost 816 out of every 100,000.

[15] See p. 178, note 4.

The foregoing analysis shows clearly that in recent times increases in automobile injuries have outrun by a wide margin increases in population. The rate of increase for the non-fatal injuries per 100,000 population is estimated to be more than 20.8 per cent. This figure is almost twice as large as the rate shown for the fatalities. It is evident, therefore, that a typical group of 100,000 people out of our population is being subjected to a very significant and rapidly growing automobile hazard.

AUTOMOBILE FATALITIES AND NON-FATAL INJURIES RELATED TO AUTOMOBILE REGISTRATIONS[16]

Some consolation is found in our past experience with automobile accidents when the automobile fatal and non-fatal injuries are related to motor vehicle registrations. The fatalities have not kept pace with the rate of increase in registrations, and no definite trend upward is discernible in the number of non-fatal automobile injuries per 100,000 automobile registrations.

According to our data the number of automobile fatalities per 100,000 automobile registrations has decreased from more than 112 in 1921 to approximately 93 in 1926. This is a decrease of over 16.7 per cent.

The downward trend is probably best indicated by a straight line, although a logarithmic line fits the data fairly well. According to the straight line the rate of fatalities per 100,000 registrations has been decreasing by a constant annual amount of about 3.98. On this basis during 1927 there probably will be approximately 90 fatalities per 100,000 registrations, and during 1928 this rate probably will decrease to about 86.

The straight line fitted to the logarithms of the data shows a downward rate of decrease of approximately 3.8 per cent. If this rate of decrease is an accurate indication of the trend, during 1927 there will be about 90 fatalities per 100,000 registrations, and this figure probably will decrease to less than 87 during 1928.

When the non-fatal injuries are related to registrations a definite trend in any direction is not evident. The figures do indi-

[16] See Tables VI and VII for complete data. Chart V shows the data diagrammatically.

cate, however, that the non-fatal injuries have fully kept pace with the large increases in registrations. In 1921 it is estimated that there were approximately 2,196 injuries per 100,000 regis-

TABLE VI

ESTIMATED AUTOMOBILE FATALITIES PER 100,000 AUTOMOBILE REGISTRATIONS IN THE UNITED STATES, 1921–26

(BUREAU OF CENSUS DEFINITION OF AUTOMOBILE FATALITIES)

Year	Mid-Year Automobile Registrations* (Unit, 1,000)	Automobile Fatalities per 100,000 Automobile Registrations†	Calculated Automobile Fatalities per 100,000 Automobile Registrations on Basis of Our Data (Straight Line Projection by Method of Least Squares)‡	Calculated Automobile Fatalities per 100,000 Automobile Registrations on Basis of Our Data (Straight Line Projection of Logarithms of the Data by Method of Least Squares)§
1921	9,848	112.2	113.6	113.8
1922	11,351	109.6	109.6	109.5
1923	13,665	109.0	105.6	105.4
1924	16,342	99.8	101.6	101.4
1925	18,773	97.6	97.6	97.6
1926	20,928	93.4	93.7	93.8
1927	.....	.....	*89.7*	*90.3*
1928	.....	.....	*85.7*	*86.9*

* These mid-year registration figures are calculated from the annual total registration figures compiled by the United States Department of Agriculture Bureau of Public Roads, and published in the *Annual Statistical Bulletin of the Standard Daily Trade Service* (1927). The mid-year figure used in the table is the arithmetic average of the total registration of the preceding year and that of the current year, e.g., the mid-year registration for 1926 is taken to be the arithmetic average of the total 1925 and the total 1926 registrations. This is based on the assumption that approximately one-half of the increase in annual registrations occurs before July 1.

† See Table I.

‡ Standard deviation of calculated figures from actual values equals 1.69 automobile fatalities per 100,000 automobile registrations.

§ Standard deviation of calculated figures from actual values equals 1.77 automobile fatalities per 100,000 automobile registrations.

TABLE VII

ESTIMATED NON-FATAL AUTOMOBILE INJURIES PER 100,000 AUTOMOBILE REGISTRATIONS IN THE UNITED STATES, 1921–26

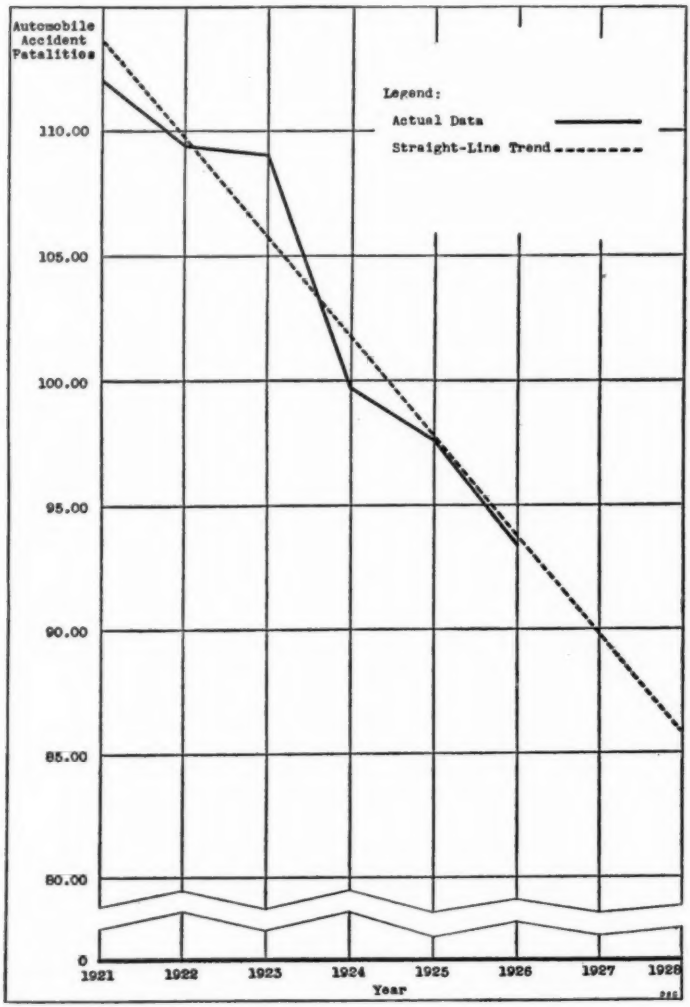
Year	Mid-Year Automobile Registrations*	Non-Fatal Automobile Injuries per 100,000 Registrations†
1921	9,848	2,196
1922	11,351	2,765
1923	13,665	2,649
1924	16,342	2,617
1925	18,773	2,854
1926	20,928	3,052

* See footnote *, Table VI.

† See Table III.

CHART V

RATIO TREND OF AUTOMOBILE ACCIDENT FATALITIES PER 100,000 AUTOMOBILE REGISTRATIONS IN THE UNITED STATES, 1921–28 (BASED ON ESTIMATED FATALITIES FOR 1921–26)



trations. The rate the next year was considerably higher, approximately 2,765. Then it began to swing down until 1925. During that year it was larger than in 1922, and during 1926, according to the available data, the rate was higher than it ever was before, over 3,052 injuries per 100,000 registrations.

The foregoing data, taken as a whole, do not afford very much consolation. Automobile registrations have increased very rapidly. During the period between 1921 and 1926 they more than doubled. The rate of fatalities per 100,000 registrations appears to be decreasing at a declining percentage rate. The rate of automobile non-fatal injuries per 100,000 registrations appears to be more than keeping pace with the increases in registrations.

CONCLUSION

The evidence indicates quite conclusively that the automobile as an instrument of injury and death has stubbornly defied all of the preventive measures now being employed. Other causes of death and injury seem to be responding more and more each year to the work of public officials, private groups, and education. But automobile fatalities and non-fatal injuries continue to climb at an alarming rate. One is forced to the conclusion that as long as we have the automobile we shall be subjected to a very serious automobile hazard. Moreover, in the near future this hazard probably will be a decidedly increasing one. On the basis of the recent past one is tempted to hazard a guess that automobile fatalities probably will be increasing arithmetically at a constant rate of at least 1,700 per annum during the next half-decade, and recorded automobile non-fatal accidents will be increasing geometrically at a constant rate of considerably over 20 per cent per annum during the same period in the near future.

Some satisfaction can be obtained when one takes cognizance of the fact that the automobile fatalities appear to have changed their rate of increase from a constant percentage to a constant absolute amount. Also, some consolation can be had from realizing that the automobile fatalities have not kept pace with motor car registrations. A grouping of automobile fatalities and non-fatal injuries, however, furnishes practically no basis

for much consolation. In 1921, according to our figures, the total fatal and non-fatal injuries were approximately 227,000. By 1926 this figure increased to 658,000. In other words, 1926 had almost three times as many automobile fatal and non-fatal injuries as 1921. On the basis of all present indications this tendency to increase is likely to continue for some time to come.[17]

Under these conditions and in terms of future prospects it is essential that very serious attention be given to other than preventive methods of dealing with the economic problems arising out of the ever present and rapidly growing automobile accidents. Prevention work, of course, should be continued and expanded. No doubt the situation would have been much more intolerable than it is now without the employment of existing preventive devices. But at the same time the prevention work is being performed there appears to be need for the development of machinery that will make possible the shifting of most of the burden of these automobile accidents both to those who are most able to bear the cost and to those who are in a strategic position to reduce the number of accidents. Such machinery may well be permanently established in view of our past experience with these automobile accidents.

It is worth noting here that one ameliorative method to which insufficient attention has been given is compulsory automobile insurance. May it not be that the solution to some of the most significant economic problems arising out of the automobile hazard lies in the further development in this field of the insurance method of dealing with risks?

APPENDIX

AUTOMOBILE FATALITY STATISTICS

Effective automobile accident prevention and relief work must be based on large bodies of accurate and properly classified data of automobile accidents. As yet, however, adequate statistics are unavailable. Mainly through the efforts of the United States Bureau of Census and the supplementary work of the Hoover National Conference on Street

[17] The estimated total fatal and non-fatal automobile injuries according to our data are as follows: 1921, 277,000; 1922, 326,000; 1923, 377,000; 1924, 440,000; 1925, 554,000; 1926, 658,000.

and Highway Safety, the National Safety Council, the National Automobile Chamber of Commerce, the United States Bureau of Public Roads, the Interstate Commerce Commission, state motor vehicle bureaus, city and state health departments, and insurance companies some data are now available on automobile accidents, particularly on accidents resulting in fatalities. Much more, however, should be done in the way of gathering and classifying data on automobile accidents before adequate information will be available for effective accident prevention and relief work. More attention should be given to the assembling of data on non-fatal automobile accidents. And both the existing data and the data to be gathered should be classified to subserve not only the purpose of aiding further accident prevention work, but also the purpose of making possible the forming of judgments with reference to the enactment of relief legislation, particularly insurance and compensation laws.

TABLE I

AUTOMOBILE FATALITIES, 1917–26

Year	Automobile Fatalities	Year	Automobile Fatalities
1917.....	9,097	1922	13,676
1918.....	9,457	1923	16,452
1919.....	9,825	1924	17,566
1920.....	11,074	1925	19,828
1921.....	12,370	1926	20,819

Recently, in an attempt to discover the trend of personal automobile accidents, it was found that even the total automobile fatality figures for the United States[18] gathered by various groups did not agree with each other. Two main series of figures were discovered. On one hand, the National Automobile Chamber of Commerce presented in its 1927 edition of *Facts and Figures of the Automobile Industry* the body of data shown in Table I.[19] For the years 1917–24, inclusive, these figures are in agreement with those given by the Hoover Committee on Statistics of the National Conference on Street

[18] The United States Bureau of Census definition of automobile fatalities is here used. Automobile fatalities are defined as fatalities arising out of an accident in which an automobile was the heaviest vehicle.

[19] National Automobile Chamber of Commerce, New York City, *Facts and Figures of the Automobile Industry* (1927), p. 58. The United States Bureau of Census definition of automobile fatalities is used here also.

and Highway Safety.[20] According to the footnote to the table presented by this Committee the figures were compiled from the records of the Department of Commerce, United States Bureau of Public Roads, and the National Automobile Chamber of Commerce. On the other hand, the National Safety Council issued in *Accident Facts for 1927* the following series of data:[21]

AUTOMOBILE FATALITIES, 1923–26

Year	Automobile Fatalities
1923	16,489
1924	17,838
1925	19,614
1926*	20,147

* The 1926 figures are provisional estimates from experience of Metropolitan Life Insurance Company. Figures for 1925 and prior years are based upon the United States Death Registration Area, Bureau of the Census.

It should be noted that for 1923 and 1924 the National Automobile Chamber of Commerce's figures were less than those presented by the National Safety Council. In 1923 the difference was 37, and in 1924 it was 272. For 1925 and 1926, however, the National Safety Council's data were lower. The difference between the two sets of data in 1925 was 214, and in 1926 it was 672. Some of these discrepancies may not be large, but they seem to indicate a more or less serious situation in regard to the possible accuracy of the data.

Facing this situation, it was decided to obtain data on automobile fatalities from as close to the original source as possible. The result is presented in Table II.

It is worthy of notice that our series of data on automobile fatalities differs from the data presented by the National Automobile Chamber of Commerce and from that of the National Safety Council. Compared to the data presented by the former organization, our figures are in every instance smaller. The discrepancies are as follows: for 1921, 1,323; for 1922, 1,241; for 1923, 1,548; for 1924, 1,248; for 1925, 1,500; and for 1926, 1,159. These differences are rather large, averaging over 1,336. In comparing our figures to the latter organization, the National Safety Council, it is again found that our data indicate lower per annum automobile fatalities. The differences shown by this comparison are as follows: for 1923, 1,585; for 1924,

[20] 1926 *Report of the Committee on Statistics Appointed by the Secretary of Commerce*, p. 13 (the National Conference on Street and Highway Safety, Washington, D.C.).

[21] National Safety Council, Chicago, Illinois, *Accident Facts* (1927), p. 6.

TABLE II

AUTOMOBILE FATALITIES BY STATES, 1921–26*

(BUREAU OF CENSUS DEFINITION OF AUTOMOBILE FATALITIES)**

State	1926	1925	1924	1923	1922	1921
Alabama	319	256	173	157	113	90
Arizona	116	76	68	47	45	23
Arkansas	†117	†107	111	‖101	‖84	‖74
California	1,464	1,327	1,254	1,239	960	876
Colorado	175	146	175	170	170	124
Connecticut	307	340	277	249	216	220
Delaware	50	37	46	55	24	17
District of Columbia	99	89	104	‖95	‖79	‖70
Florida	515	449	242	170	122	104
Georgia	‖414	‡386	307	259	215	‖189
Idaho	77	56	54	51	21	18
Illinois	1,391	1,305	1,092	1,031	1,003	887
Indiana	559	509	480	433	306	266
Iowa	264	271	211	242	‖194	‖171
Kansas	241	235	149	213	171	154
Kentucky	277	237	197	166	128	105
Louisiana	271	234	210	158	104	97
Maine	100	98	91	91	79	56
Maryland	312	271	246	243	224	177
Massachusetts	682	738	696	466	512	535
Michigan	1,112	955	863	738	574	441
Minnesota	326	361	366	328	260	216
Mississippi	223	175	123	69	60	46
Missouri	529	507	455	398	317	276
Montana	93	82	69	49	48	48
Nebraska	154	125	113	123	131	104
Nevada	15	22	13	‖12	‖10	‖9
New Hampshire	68	82	60	59	49	38
New Jersey	792	771	746	672	543	484
New Mexico	†39	†44	46	‖42	‖35	‖31
New York	1,936	1,888	¶1,985	¶1,930	¶1,788	¶1,632
North Carolina	455	376	328	258	169	139
North Dakota	70	68	34	38	24	§29
Ohio	1,317	1,293	1,024	1,078	818	734
Oklahoma	286	216	175	156	130	130
Oregon	187	144	144	120	113	103
Pennsylvania	1,734	1,576	1,535	1,592	1,260	1,060
Rhode Island	127	133	113	97	93	83
South Carolina	192	179	167	119	76	74
South Dakota	86	§81	§67	§48	§36	§34
Tennessee	312	278	232	171	160	134
Texas	405	437	313	196	203	212
Utah	80	89	81	60	59	53
Vermont	56	63	57	54	37	27
Virginia	303	271	240	200	137	140
Washington	342	299	265	240	173	202
West Virginia	231	208	129	‖118	‖97	‖85
Wisconsin	384	371	333	252	237	205
Wyoming	56	67	59	51	28	25
Total for United States	19,660	18,328	16,318	14,904	12,435	11,047

[Footnotes on following page]

FOOTNOTES FOR TABLE II

* Data were obtained from the state boards of health, state departments of motor vehicles, and the United States Department of Commerce. Whenever conflicting reports were received from an important state, the highest figure was taken to be the accurate one.

† These statistics were taken from *Accident Facts* (1927), p. 19, published by the National Safety Council, 108 East Ohio Street, Chicago, Illinois.

‡ This figure was taken from *Report No. 10 of the Florida Board of Health*, Vol. XVIII, which gave the statistics compiled by the Baltimore Railroad (p. 150).

§ The statistical year in the case of South Dakota started July 1 and ended June 30. The 1926 figure is corrected for the regular calendar year.

|| The method of computation used for these estimates (using West Virginia for purposes of illustration) is as follows: West Virginia had 231 fatalities in 1926, 208 in 1925, and 129 in 1924. The problem was to calculate the figures for 1923, 1922 and 1921, which were not available from any official source. The 44 state figures available for both 1924 and 1923 were totaled for each year, and the ratio of the totals obtained (.91228). This ratio was applied to 129 (the 1924 figure for West Virginia) and 118 was secured for 1923. Likewise, the ratio of the totals of 44 state figures for both 1923 and 1922 was calculated (.83603) and was applied to 118 (computed figure for 1923), and 97 secured as the approximate figure for 1922 for West Virginia. Then the ratio of totals—40 state figures available for both 1922 and 1921—was computed and 85 obtained for 1921 for West Virginia. The same method was employed in getting some of the figures for Arkansas, District of Columbia, Georgia, Nevada, and New Mexico. Whenever data for a given year were unavailable it was assumed that the figure for that year would follow the general trend of the available data during the same period.

¶ The report of the United States Department of Commerce gives these figures for New York, 1921–24 inclusive, as conforming to the Bureau of Census definition of automobile fatalities, but an analysis of these figures and the 1926 figures from the same source indicates a probable error. Our conclusion is that the 1921–24 figures are probably *inclusive* of fatalities resulting from collisions between automobiles and heavier vehicles. This conclusion would explain the change in the trend, the "break" in the upward trend in 1925, the first year for which a complete analysis of the figures is available. It may be, however, that this discrepancy arises out of a change in definition.

** This definition excludes fatalities resulting from collisions between automobile and heavier vehicles. The most important types of automobile fatalities not included in this definition are those involving railroad trains or street cars. Estimated figures for these types of fatalities are presented in the following table:

ESTIMATED FATALITIES RESULTING FROM COLLISIONS BETWEEN AUTOMOBILES AND HEAVIER VEHICLES IN THE UNITED STATES, 1924–26

Year	Grade Crossing Fatalities (American Railway Association Figures)[1]	Automobile Fatalities at Grade Crossings (American Railway Association)[2]	Calculated Fatalities Caused by Collisions between Automobiles and Street Cars[3]	Total Fatalities Caused by Collisions between Automobiles and Heavier Vehicles	Total Fatalities Caused by Automobiles (All Causes)
1920	1,791	.....	.....	.....	.....
1921	1,705	.....	.....	.....	.....
1922	1,810	.....	.....	.....	.....
1923	2,268	.....	.....	.....	.....
1924	2,149	1,688	1,139	2,827	19,145
1925	2,306	1,784	1,204	2,988	21,316
1926	2,492	2,062	1,392	3,454	23,114

[1] National Automobile Chamber of Commerce, *Facts and Figures of Automobile Industry* (1927), p. 58.

[2] National Safety Council, Chicago, Illinois, *Accident Facts* (1927), p. 27, and *The Toll of Public Accidents* (1926), p. 29.

[3] The estimated figures in this column were computed by the following method: Several states presented separate figures for automobile fatalities involving railroad trains and for those involving street cars. By totaling these two sets of figures separately an approximate ratio was established between automobile-railroad fatalities and automobile-street car fatalities, viz., 1.675. By applying this ratio to the American Railway Association figures for automobile fatalities at grade crossings, the estimated figure for automobile-street car fatalities was derived.

1,520; for 1925, 1,286; for 1926, 487. These discrepancies are rather large, averaging over 1,219.

Evidently automobile accident statistics are so inadequate that even the measurement of total automobile fatalities in the United States is a subject for a scientific conjecture. It is only recently that the public has begun to realize the seriousness of the problems arising out of the fact that the automobile is an instrument of death and injury. At present a number of states are cognizant of the value of automobile accident data and have made arrangements to collect, analyze, and present statistics on automobile fatalities and injuries. Some states, however, either make no pretense of obtaining this type of data or perform the task in such a haphazard and manner that the figures gathered are incomplete and inaccurate.[22]

In obtaining the data on automobile fatalities shown in Table II of this Appendix we attempted to make as accurate a conjecture as possible. An effort was made to study carefully the statistics presented by various sources, with a view of correcting errors, omissions and misclassifications.

Most of the figures contained in this table have been compiled from reports secured directly from the state boards of health and from state departments of motor vehicles. A third official source relied upon to some extent when reports could not be secured directly from state departments was the United States Department of Commerce. These three official sources furnished practically all of the data presented in the table.

A few exceptions, however, should be noted. As indicated earlier, some states have made no provision for collecting automobile accident data, and were unable, therefore, to furnish the required information. In these cases sources others than those mentioned were relied upon, and in some unimportant instances estimates had to be made.[23]

In compiling the data from the reports of the three official sources it was not an unusual situation to have three reports for a given state, each containing a different figure. When such a situation presented itself an attempt was made through further correspondence with the officials to discover which figure was the correct one. In some instances, however, it was impossible to eliminate these discrepancies. Then a

[22] For a summary of accident-reporting methods and rules of state highway departments or motor vehicle commissioners, see Part I of the Appendix to the 1924 report of the Hoover Committee on Statistics of National Conference on Street and Highway Safety, Washington, D.C.

[23] See footnote ‖ to Table II, p. 198.

general rule was followed of selecting the largest figure given by any authentic official source. This procedure was based on the assumption that it was much more likely that some fatalities in the given state had not been reported to *all* of the organizations collecting such information than that any fatality had been reported more than once to the *same* organization, that discrepancies were more likely to be due to omissions rather than to duplications. It seemed, therefore, reasonable to choose as the correct observation the largest figure presented by any authentic official source.

In addition to this more or less arbitrary method of choosing the "correct" automobile fatality figure for certain states, out of the 294 figures presented in our table, 4 were taken from the reports of the National Safety Council; 1 was taken from a report prepared by the Baltimore & Ohio Railroad; 19 were estimated.[24] These figures, however, are relatively unimportant, i.e., they are the figures for states having the smallest number of automobile fatalities.

Why do these rather significant and more or less consistent discrepancies exist between our figures on automobile fatalities for the United States and those presented by both the National Safety Council and the National Automobile Chamber of Commerce? Under present conditions of collecting and gathering data on automobile accidents it is quite evident that the answer to this question must be based somewhat on guesswork. It also should be noted that the bias, in the main, is likely to be in the direction of underestimating rather than overestimating.

Nevertheless, these organizations are now employing a method of obtaining total automobile fatalities for the United States that is likely to result in an exaggerated annual fatality figure. They estimate the annual automobile fatalities on the basis of the United States Death Registration Area. Figures on fatalities are obtained directly from this area. Then, by applying the percentage of the total population that is found in this registration area to the directly obtained fatality figures, an estimate is made of the total fatalities for the United States.[25] Obviously, this method would result in an accurate estimate

[24] See series of footnotes to Table II, p. 198.

[25] States that were not included in Registration Area are as follows:

States not included during period 1921–25, inclusive, Arizona, Arkansas, Nevada, New Mexico, Oklahoma, South Dakota, Texas; states not included until 1925, West Virginia, Alabama; state not included until 1924, North Dakota; state not included until 1923, Iowa; states not included until 1922, Georgia, Idaho, and Wyoming (see *Statistical Abstract of the United States Census* [1926], p. 23).

only if the fatalities in the registration area and outside the registration area are in the same proportion as the population in the two areas. But the proportion probably is not the same. Automobile fatalities are closely related to population and automobile registration, and neither the density of population nor the number of automobiles registered in the registration area is as great as in the rest of the United States. Consequently the automobile fatality figures obtained by both the National Safety Council and the National Automobile Chamber of Commerce may be exaggerating the situation.

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COUNTRY BANKING PRACTICES IN NORTHERN TEXAS

I. LOANS AND INVESTMENTS

A. INTRODUCTION

IN THE multitudinous discussions of the American banking system the tendency has been to utilize the practices of the larger banks in the money centers of the country as the basis for discussion. In consequence relatively little attention has been given to banking as conducted in the smaller towns and rural communities. This present study of a small group of commercial banks in northern Texas is designed for this niche in banking literature. Major consideration has been given to the actual conduct of the affairs of the banks, the policies regulating them, and the causes underlying their practices.

Because the banks serve a territory dependent upon agricultural production as the chief source of income, their welfare is inseparably linked with agricultural interests. Since farm and crop conditions are continually changing and are subject to a large number of varying factors, such as rainfall, frosts, hail, and winds, it is impossible for the banks to form definite plans for any considerable length of time of actual operations. For this reason it must be borne in mind throughout this discussion that no arbitrary rule can be cited as governing the practices of the banks at any one time; the policies which are followed vary from season to season and from year to year.[1]

The population of this territory, exclusive of Fort Worth and Wichita Falls, is about 425,000. In the spring of 1926 there were 168 banks in this region, an average of one bank to 2,500 inhabitants. Of these banks, 45 per cent are national banks, 43 per cent state banks, and 12 per cent are privately organized. Total bank deposits vary from $65,000,000 to $80,000,000. None of

[1] Data and material for this study have been obtained in large part by the questionnaire method, which, it has been believed, presented the most expedient, and at the same time the most uniform, plan for the collection of information from this number of banks.

these banks is in a town of more than 10,000 persons. With the depression in the prices of farm products in 1920 and subsequent years seventeen banks in this area have either been liquidated or consolidated with others. Those small banks which are located in communities having no minor or secondary industries and which depend on funds from their customers' sales of crops as their chief source of deposits have, as a class, been particularly hard hit by the era of low prices.

This paper deals with the loans of these banks, made both to local interests and to other sections, the purchase of securities as investments together with the amount of funds thus used, the principal legal instruments or methods by which local loans are made, the uses to which the proceeds of the loans are put in serving the economic interests of the community, the length of time for which loans are made and the seasons of maturity, and the officials empowered to authorize loans.

B. ASSETS OTHER THAN LOCAL LOANS

The primary earning assets of the banks are, of course, their loans and discounts, made in large part to local customers. The typical banker in this region remarks that his bank is organized with the dual purpose of earning dividends for his stockholders and of assisting in the economic development and welfare of his community. In consequence the prevailing tendency is to grant "all worthy and justifiable local loans first." If there remains a surplus of loanable funds then the bank seeks an outside channel for earning income. This prevailing tendency is not without its many exceptions; there are those who "let their idle funds stay in the vault and never make any attempt to loan except to interests in the community," others whose policy is to lend as little locally as possible, and still others who "try to take care of all legitimate demands but make no effort to create a local demand." There are a few banks which lend as little as 30 per cent of their total assets to local interests, in which case investments in securities and commercial paper and deposits with correspondents constitute the remainder.

On the average, the loans and discounts of national banks were, at the time of this investigation, 59.5 per cent of the total

resources; those of state banks were 63.5 per cent, and those of private banks, 61 per cent. A comprehensive idea of the loans and discounts of all these banks may be obtained from the accompanying table, showing the number of banks of each group under each percentage division of loans, at midsummer, 1926.

TABLE I

RELATIONSHIP OF LOANS AND DISCOUNTS TO TOTAL ASSETS

Percentage of Total Assets Consisting of Loans and Discounts*	Number of National Banks	Number of State Banks	Number of Private Banks	Total
Under 30.....	4	4	0	8
30–39.....	12	10	2	24
40–49.....	20	13	1	34
50–59.....	16	13	1	30
60–69.....	20	18	4	42
70–79.....	3	12	0	15
80 or above....	2	4	3	9
Total.....	77	74	11	162

* Loans and discounts, as here used, include principally such items as acceptances, drafts secured by bills of lading, bills of exchange, call loans, certificates of deposits of other banks, commercial paper, promissory notes, overdrafts, real estate mortgage loans, and numerous minor items.

Data are not available for six private banks, which, because they are not required to make financial statements periodically, usually attest to their responsibility and financial condition by the statement: "Individual responsibility $———."

It is not to be understood that these percentages remain constant throughout the year. The majority of local loans are made to mature in the fall of the year, when crops are being moved. After the crops have been moved the most of the banks find little local demand for funds; they accordingly purchase commercial paper, usually in an amount equal to that of the maturing loans. A few banks buy no paper, but permit surplus funds to accumulate to their credit with their city correspondents who pay interest on the average daily balances. It is only among this latter class of banks, constituting less than 20 per cent of the banks under discussion, that any large changes occur in the foregoing percentages; their actual loans may become quite small during the autumn and winter months, when local demands decline.

A typical plan of procedure in making seasonal purchases of commercial paper is outlined by one small bank the loans and

discounts of which average around $75,000 throughout the year and represent about 60 per cent of its total assets:

> When the farmers pay their notes in October and November the bank accumulates a large reserve that must be loaned or invested, so we select some high-class commercial paper, say, to begin November 1 and run 60–90 days. At intervals of about ten days we buy more as we have funds to spare, making the maturities due about the first or fifteenth, or periods of ten days to two weeks apart, beginning in January and running through the following months. We must also keep in mind the summer months, when there are no funds coming in. Our first purchase in the fall is usually $20,000, and it is made to come due January 1. If we need the $20,000 before any more paper comes due, we collect; if we do not need it, we renew it. Or if we need $10,000 of it, we keep this amount, and purchase other paper with the remainder.

Loans and discounts, therefore, may consist almost purely of local loans at one season and may be interspersed with, or even replaced by a considerable amount of commercial paper at another.[2] Of the banks holding commercial paper at the time of inquiry, 25 were national banks, 20 were state banks, and only two were private banks. The amount held by national banks at this time averaged 15.3 per cent of their total assets, while the twenty state banks averaged 24.8 per cent, three of which showed loans of this type in amounts in excess of 50 per cent of total assets. Eleven banks, or approximately 10 per cent, indicated that paper is rarely, or never, purchased. Five of these were private banks, comprising 50 per cent of the private banks reporting.

For the most part this paper consists of issues of leading meat-packing companies, mail-order houses, wholesale lumber companies, department and chain stores, and manufacturing

[2] At the time of this study, which was begun at a season when the amount of commercial paper held by the banks should typically have been large, it was found that less than 45 per cent of the banks owned commercial paper. Yet more than 80 per cent state that such paper is purchased at times when surplus funds are accumulating. The situation as of that time may well be explained by the fact that a partial cotton and grain failure in the preceding summer and autumn held deposits at a low point, and at the same time caused an abnormally heavy demand locally for loans to be used in the production of the 1926 crops. This fact is strikingly brought out by the cashier of a bank in a prosperous rural community, who remarks that these two crops, grain and cotton, netted this community $325,000 in 1924, and only $65,000 in 1925.

concerns of all kinds, practically all of which are located in the North and East, and enjoy a national market for their paper. The bank may buy either directly from commercial-paper brokers, or through city correspondents who may be asked to purchase paper for the account of the country bank and to whom the small bank looks for a thorough check on the rating of the paper before the purchase is made.

There are a few bankers who show some hesitancy in purchasing commercial paper; they have a preference either for the purchase of Liberty bonds, or for the placing of funds on deposit with correspondents. Several explanations are offered by the banks for this attitude. There exists no convenient market for commercial paper by which it can be readily disposed of, whereas Liberty bonds can be sold "any day the money is needed"; likewise funds can be easily recalled from correspondents. There is, furthermore, inability in some instances to select good grades of paper. It is true, as suggested before, that city banks will often examine carefully the security behind commercial paper before the smaller banks purchase it. "Of course our correspondent banks and the Federal Reserve bank," states one cashier, "are always very nice to assist us, but they as well as ourselves are only human,"[3] with the result that "paper of some good concerns who have gotten into deep water have carried some of the banks of this area into trouble along with the concerns issuing the paper." Since the risk is a factor to be considered in purchasing commercial paper, and since the paper is usually in large denominations, it is practically impossible for the country banks to distribute their commercial paper risks as effectively as can be

[3] A rather clear insight into this man's conservative attitude toward commercial paper may be gleaned from his remarks, which he continues thus: "The fact that we [country bankers] do not know much about commercial paper reminds me of driving my car. I prefer to go at a moderate rate of speed in driving, and never let the car get beyond my control so that at all times I know just how the car is going to perform. So in this matter of investing surplus funds: we are surfeited in the fall of the year for some three or four months, busy otherwise in collections and adjustments and in the routine affairs of a busy season, so that we do not have time to look properly into the question of commercial paper; and as our large surplus begins to melt away, we figure that the problem is to look after our local affairs rather than try to assist some worthy manufacturer a thousand miles away."

done by larger banks, for the amount of paper which may be held at any one time by a small bank is comparatively small. One loss in this kind of asset may offset any profits made on judiciously placed local loans. Or, as it is aptly phrased by one banker, "we find this objection to commercial paper: that our local boards [of directors] are not in the least familiar with these offerings; that they are offered as a rule in large denominations; that the hazards of these notes which generally take the limits of loaning capacity are as great as some of our local loans." This attitude, however, is the exception rather than the rule, and the typical bank states that it can obtain all the first-class commercial paper it is able to use.

Another element of loans and discounts, although infrequently used by most of these banks, is the bank acceptance. There is apparently a lack of familiarity on the part of the majority of these banks with this particular type of paper. A few use the term "banker's indorsement" instead. Typically, the bank acceptance in that section pays a higher rate than commercial paper, and yet has the same advantages of liquidation and short maturity. Only seventeen banks report that they hold bank acceptances, which comprise, on the average, 12 per cent of the total assets of the banks holding them. The accepting banks are usually in Fort Worth, Dallas, or Wichita Falls, and the acceptances are drawn by industrial concerns in those cities.

A single bank holds its own acceptances as a loan, and this is a small national bank having 8 per cent of its assets employed in this manner. The amount of acceptances made by banks of this area appears to be insignificant.[4]

Another alternative available to these banks in disposing of their surplus funds is that of investing in securities. Sixty-eight national banks of this territory (as of July, 1926) owned bonds and securities as investments,[5] forty-six state banks held similar

[4] Texas state banking laws permit bank acceptances only for the "importation and exportation" of goods, so that country banks seldom have occasion to make acceptances (cf. State Banking Laws, Sec. 228).

[5] "Bonds and securities" as here used include assessments in the Guaranty Fund for State Banks, bonds to secure circulation, capital stock, Liberty bonds, mortgage bonds, and minor items. Classification by H. L. Droegmueller, First National Bank, Chicago.

securities, while only two of the eleven private banks on which data are available held securities, these banks representing percentages of 88.3, 62.1, and 18.2 of each class of banks, respectively. Of the national banks, bonds and securities formed 10 per cent of the total assets, while of the state banks bonds and securities averaged 7 per cent of total assets. Of the two private banks, one had 31 per cent and the other 25 per cent of its resources thus invested.

These bonds and securities consist largely of Liberty Loan bonds, United States bonds to secure circulation of national bank notes, Treasury Certificates, a few miscellaneous bonds, and local and municipal warrants. There seems to be a demand for Liberty bonds in preference to Treasury Certificates. Only twelve of the reporting banks show Treasury Certificates as part of their earning assets, and in only two instances is the figure above 15 per cent of total resources. As was indicated earlier, several of the banks make a practice of buying Liberty bonds when there exists no local demand for surplus funds. The rate of return is practically the same as that on commercial paper, with the risk on the bonds presumably less than that on commercial paper. A relatively higher percentage of private banks purchase government bonds than does either of the classes of incorporated banks.

One bank, which has one-third of its assets consisting of investments, states that it recently purchased $10,000 of school bonds, issued by its local school district, since it happened to have available funds. Others buy school, city, and county warrants, usually with a short time to run, though these investments represent no well-defined policy of the bank, since there is little regularity as to the availability of such paper.

In the case of the banks holding Liberty bonds, the purchase of these securities may be made for two different purposes: either (1) to serve as a long-time investment, in which case the bonds are held ordinarily until maturity, except for times when financial crises create a larger local demand for funds than the banks can meet without liquidating the bonds; or (2) as a means of investing surplus funds during the autumn and early winter, in which case they are liquidated as needs arise during the follow-

ing spring and summer. As regards the case of the long-time investment, the market prices quoted on bonds largely determine the policies of the banks in liquidating them in times of unusual need. As regards the possibility of suffering losses on bonds held for a short period, the banks voice the feeling that the stability of the bonds has reduced this risk to a negligible consideration.

There are few call loans made by these banks for speculation on the New York Stock Exchange. Only ten banks—seven national and three state—make loans of this type frequently enough to record the fact. Here also the seasonal factor enters; for, as one bank points out, call loans may be made only when local demand is small and local conditions favorable for outside loans. The amounts loaned on call are usually small; in all but two cases they are 10 per cent or less of the total deposits of the respective banks.

An even smaller number of these banks buy trade acceptances. One bank, in the winter of 1925–26, loaned funds to its customers who wished to hold their cotton for a more favorable market. Time certificates of deposits of other banks are sometimes bought. Nine banks indicate that they make no other disposition of funds than to leave them with correspondents, subject to immediate withdrawal, when there is no local demand for them.

The remainder of the assets of these banks consists of cash on hand and due from other banks, items with the Federal Reserve bank, legal reserves with the Reserve bank at Dallas in the case of members of the Federal Reserve System, legal reserves with various other banks serving as reserve banks for state banks, and a host of miscellaneous items consisting principally of those elements essential to the operation of the banks. Of these resources the only item-earning returns are the deposits placed with correspondent banks which pay interest on them.

As of the spring of 1926, the total resources of each class of banks were divided as shown in Table II.

C. LOCAL LOANS

The nature of the loans of these banks to outside interests, and the type of investments which are made, probably differ lit-

tle from those made by banks of other sections. It is in the matter of local loans, the instruments used in making them, and the purposes to which they are devoted that the characteristics peculiar to banks of northern Texas are to be found.

TABLE II

Class of Banks	Loans and Discounts*	Bonds and Securities	Cash and Exchange; Miscellaneous†	Total
National.....	59.5	13.1	27.4	100.0
State.....	63.4	6.0	30.6	100.0
Private‡.....	61.0	5.0	34.0	100.0

* These group averages are derived by averaging the percentages of each division of resources of each bank, rather than by obtaining the total amount of each division in terms of dollars and then taking the percentages, because of simplicity in computation.

† The division of assets as here shown for national and state banks is based on data obtained in the questionnaire. As previously stated, figures given by private banks were insufficient. Confusion arising in replying to the questionnaire by the other classes of banks has added difficulty in obtaining accuracy of data on this point. For comparative purposes, data compiled from the *Banker's Directory* (July, 1925) are shown herewith:

	Loans	Securities	Cash and Exchange
National.....	51.6	8.8	39.6
State.....	55.4	4.4	40.2

These figures tend to show the same relative proportions between loans and discounts, and bonds and securities, that are indicated in the answers to the questionnaire. The items under Cash and Exchange tend to assume relatively higher importance as here shown, for this publication lists items in transit to the clearing house as assets, rather than showing the net balance between items for collection and items to be credited the bank at the clearing house.

‡ The figures for private banks are compiled from the *Banker's Directory* (July, 1925) as the replies of the private banks on this particular detail were inadequate for the purpose.

The promissory note, with no security and having only the maker's name, is in general use among these banks, though there is a decided tendency to limit its use by those banks serving purely agricultural interests. One-fourth, or 25.8 per cent of national bank loans, are on the average made on the unsecured note; while an average of 18.3 per cent of all loans are thus made by state banks, and only 11.1 per cent by private banks. The varying policies of the individual bankers are the outstanding situation with respect to this type of loan. There are banks depending almost entirely upon agricultural production for their continued solvency which permit a large part of their loans to be made without security.[6] Others, located in larger towns and de-

[6] The cashier of a small national bank which has 55 per cent of its loans made on unsecured promissory notes philosophically explains that "if a borrower is determined to be dishonest he will beat you out of a debt, even though secured. I would rather loan to a good moral man on his straight note than make a loan to a party whom I knew, as we say, to be a 'hard nut,' and have security. I try to make loans to people I think good, without security."

pendent upon both agricultural and some form of industrial production, loan very little money without security. The character of the borrower, his property holdings, his status as a landowner or renter, his financial condition[7] at the time of the loan, must all be weighed by the bank in determining the type of note to be used, so that even under similar conditions practices vary from bank to bank.

The supplement to the single-name promissory note—the indorsed or accommodation note having two or more names—is as widely used, though not to as great an extent, as the one-name note. National banks make 18.3 per cent of their local loans in this way; state banks, 15.8 per cent; and private banks, 15.2 per cent. Private banks show a higher figure of loans made on indorsed notes than on single-name notes, while national and state banks use it to a less degree, though one state bank makes 60 per cent of its loans on notes having two or more signatures. Its value lies in the fact that it permits the banker to decrease his risk by an increase in the financial responsibility of the parties signing the paper.[8] The indorsed note ranks third in order of importance among the instruments used in making loans among the bankers of northern Texas.

The trade acceptance is little used as the basis for loans. Only one state bank holds acceptances as of the time of this report, the amount constituting 20 per cent of its loans. Five national banks loan on trade acceptances to a small extent, for the most part during the cotton-moving season, but none of them in large quantities. No private bank reports its use.

Loans secured by mortgages on real estate present a wide variation in practices of the banks of that section. Only thirty-eight reporting banks make this type of loan. National banks have been permitted to loan on real estate only since 1913,[9] while

[7] Only one bank mentions requirement of financial statement for unsecured notes.

[8] One state bank that fails to indicate the amount of loans made on indorsed notes explains that "where notes are made indorsed by other parties, one of the two must be worth five times the amount of the note over and above what the law allows."

[9] "Any national banking association not situated in a central reserve city may make loans secured by improved and unencumbered farm land situated

state banks have had this permission since the enactment of the state banking act in 1905;[10] yet the amount of loans made on real estate, both town and rural, by national banks exceeds that of state banks. Twenty-five national banks, or 50 per cent of those reporting, have loans on urban real estate which average 5.6 per cent of their loaned funds; eleven state banks, on the same class of security, average 8 per cent of their loans; while two private banks thus invest 1 per cent of their loans. One state bank has 25 per cent of its loans made upon improved urban real estate, and is responsible for the high average shown by state banks.[11] On unencumbered rural real estate twenty-nine national banks make loans ranging from 2 per cent to 20 per cent of their total loans, with the average percentage of 7.1 per cent. Nineteen state banks also loan on rural real estate, but in no case is more than 12½ per cent of the resources of any bank thus loaned. The average figure is 5.2 per cent. Five private banks average 12 per cent of their loans made on this type of security.[12]

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within its reserve district, or within a radius of 100 miles of the place in which such bank is located . . . . and may also make loans secured by improved and unencumbered real estate located within 100 miles of the place where such bank is located . . . .; but no loan made upon the security of such farm land shall be made for a longer time than five years, and no loan made upon the security of such real estate as distinguished from farm land shall be made for a longer time than one year, nor shall the amount of any such loan . . . . exceed 50 per centum of the actual value of the property offered as security" (National Bank Act, Art. 206).

[10] It is worthy of comment that a few bankers are not aware that loans on real estate are permitted. One banker, who has 3 per cent of his loans secured by real estate, remarks that "national banks are not allowed to carry real estate mortgages except to secure previous debts contracted." The cashier of a state bank which shows 7½ per cent of its loans made on real estate, apologetically adds that "no bank is supposed to make a real estate loan, but I suppose that every bank at some time, or even most of the time, has this kind of paper forced upon him better to secure some loss his customer has taken."

[11] State banks have the privilege "of loaning money upon real estate . . . . provided, that no bank . . . . shall loan more than 50 per centum of its securities upon real estate; and no such bank shall make a loan on real estate to an amount greater than 50 per centum of the reasonable cash value thereof" (State Banking Law of Texas, Sec. 7).

[12] A twofold objection is cited to loans secured by mortgages on real estate: property in small towns is difficult to sell in case of foreclosure; and the proceeds of the loans are usually for unproductive purposes.

Regardless of any policies which state banks as a whole may care to follow in regard to lending on real estate, the fact that the most of them are located in small rural communities where many of the borrowers are not realty owners restricts the possibilities of loans of this character. Moreover, the owners of real property in the smaller towns and villages where land is typically owned in small parcels are often prevented by the Texas Homestead Laws[13] from giving mortgages as security for loans. In addition to these reasons (the latter of which is, of course, applicable to all banks) is the policy of state and national banks of lending on unsecured notes to real estate owners who borrow in small amounts; for the person who owns land is deemed to have greater financial responsibility and integrity than the typical renter, so that within reasonable amounts there is little desire on the part of the banker to mortgage his customers' land.

But by far the most commonly used method of securing loans is the chattel mortgage, which, in the case of farm loans, is placed upon live stock (either cows or draft animals), upon crops in the process of production (especially cotton and small grains), and upon any other articles of value which can be offered as security. In the case of loans to persons other than farmers, chattels such as diamonds and automobiles are often mortgaged, though not nearly to the extent that is characteristic of agricultural equipment.

There are probably two reasons for the widespread popularity of the chattel mortgage as security among the bankers of this section, as opposed to any other kind of security. In the first place the chattel mortgage legally provides a tangible security

[13] The homestead "shall be reserved to every family, exempt from attachment or execution and every other species of forced sale for the payment of debts" (Texas Civil Revised Statutes, Art. 3832). "The homestead of a family, not in a town or city, shall consist of not more than two hundred acres, which may be in one or more parcels, with the improvements thereon; the homestead in a city, town or village shall consist of a lot or lots, not to exceed five thousand dollars at the time of their designation as a homestead, without reference to the value of any improvement thereon; provided that the same shall be used for the purpose of a home, or as a place to exercise the calling or business of the head of a family. Any temporary renting of the homestead shall not change the character of the same, when no other homestead has been acquired" (Texas Civ. Rev. Stat., Art. 3833).

upon which foreclosure may be made in case of non-payment of a loan; and in the second place, the fact that loans of this sort are made to renters rather than to realty owners indicates the use of this device as a means of establishing the moral and financial responsibility of the borrower. As noticed earlier, the single- and double-name notes are made principally to owners of real estate. The owner of real estate is considered a good risk because of his permanent or semifixed interests in the community; whereas the renter who may move from one community to another without much ado is considered a poor risk, and consequently a mortgage is taken on his chattels.[14] Here again banks are restricted by the Homestead Law from lending on certain items of property,[15] so that crops in the process of production often become the leading security for this type of loan.

Whether loans made on chattel mortgages actually place the lending bank in a stronger position or not, in so far as security is involved, may be seriously questioned. If the property on which the mortgage is placed cannot be disposed of to its owner's advantage, and thus be used to remove the owner's obligation, it is extremely doubtful if the obliging bank can realize the amount of its own interests in the property. In the matter of liens on crops not yet produced the loan will typically be liquidated if within the ability of the borrower, and should there be failure of the crop, there is no security upon which the bank may foreclose.[16] The moral constraint under which the borrower is

[14] A person making a chattel mortgage "shall not remove the property pledged from the county, nor otherwise sell or dispose of the same, without the consent of the mortgagee; and in case of violation of the provisions of this article, the mortgagee shall be entitled to possession of the property, and to have the same then sold for the payment of his debt, whether the same has become due or not" (Texas Civil Revised Statutes, Art. 5496).

[15] Property for the use of the family is specifically exempted from attachment or forced sale by Art. 3832 of the Texas Civil Revised Statutes.

[16] Too often, when bountiful crops are raised and the farmer might profit by his abundant yields, he is required to sell on an early or unfavorable market, as the banker frequently desires liquidation of the loan at the earliest moment, irrespective of market conditions. There is nothing, however, in the writer's knowledge to substantiate the belief, sometimes expressed, that marketable crops on which a mortgage rests are consigned to the bank for sale by that institution, which is left free to impair the owner's residual interest, if there remains such above the bank's equity.

placed, and his inability to remove or otherwise dispose of property thus mortgaged without the knowledge and consent of the mortgagee, must be the chief value of this security to the bank, whether the loan is for productive or non-productive purposes.

It is interesting to note that national banks, while using chattel mortgages more than any other one means of securing loans, do not use it as much as they use the two kinds of unsecured paper considered as a unit. National banks make 40.1 per cent of their loans on chattel mortgages, while 44.1 per cent of their loans are based on paper bearing one or more names. This is a distinct contrast to state banks, which average 55.8 per cent of their loans made on chattel mortgages and only 34.9 per cent made on unsecured notes. And private banks, apparently exercising a great deal of caution as to security, loan only 27.1 per cent on unsecured paper, while 63.1 per cent of loans are secured by liens on chattels. The composite average of loans on chattel mortgages for all banks is 47.6 per cent of all loans made locally.

Of much less importance among these banks, but yet of some use among the larger ones, are collateral loans. Because of the economic interests of rural communities, few securities are held by a bank's customers; for savings are typically invested in property which will further increase production or the returns from production. In the space provided for this item in the questionnaire used, the cashier of one small bank tersely remarks, "Hardly any here." But in the larger towns of the district, where industrial interests are more important, there are found numerous banks lending on securities offered as collateral. It is not surprising, therefore, that national banks have more loans of this character and of a somewhat higher value than state or private banks; for, as previously suggested, the national banks tend to be more numerous in the larger towns of this area. Twenty-four banks of this class have loans made on collateral securities,[17] which form 6.8 per cent of the loans of these banks. Nine state banks have loans similarly made which average 5 per cent of their total loans. Two private banks, one of which has 2 per cent

[17] Neither state nor national banks are permitted to loan on their own stocks for periods greater than six months. No other limitations on collateral loans obtain (State Banking Laws of Texas, Sec. 246; National Bank Act, Sec. 5201).

and the other 7 per cent of its loans secured by collateral, report loans of this nature. But of the entire group reporting, only thirty-five, or approximately 33 per cent, use this type of loan.

Very few of the banks here studied loan on drafts secured by bills of lading or warehouse receipts. This fact, however, is probably due, not to an established policy of the banking community, but to the marketing practices of this territory, in accordance with which crops are moved principally with the aid of outside capital, i.e., by elevator companies, commission houses, and cotton-brokers in Fort Worth, Dallas, Wichita Falls, Houston, and other Texas cities; or if local funds are used they are usually advanced on promissory notes. Since such drafts, if drawn to finance shipment of produce, are eligible for rediscount with the Federal Reserve bank,[18] there is no reason for national banks not using this method of lending if occasion demands, particularly during the autumn marketing months. Only five banks answered the questionnaire by giving a definite percentage which would show the comparative importance of this loan. Three are national and two are state; the amounts mentioned are insignificant. Several other banks state that small loans are made during the harvest season, but mention no specific amounts.

Likewise, paper drawn for commercial purposes and secured by a lien on cotton or cotton-seed products is little used,[19] except in a few instances during the fall. Fifteen banks show small percentages of loans of this nature, and others indicate some use of

[18] "Upon the indorsement of any of its members . . . . any Federal Reserve bank may discount notes, drafts, and bills of exchange arising out of actual commercial transactions" (Federal Reserve Act, Sec. 13); and "may discount or purchase bills of exchange, payable at sight or on demand, which are drawn to finance the shipping of non-perishable, readily marketable, staple agricultural products, and are secured by bills of lading or other shipping documents conveying or securing title to such products" (Act of February 6, 1923).

[19] Texas laws specifically authorize state banks to lend on this type of security, in addition to the powers delegated state banks to lend on bills of lading and warehouse receipts. "All state banks . . . . shall be permitted to loan upon cotton and cottonseed products, to the same extent and upon the same conditions as is now or may be provided for national banks under the laws of the United States" (State Banking Laws, Sec. 245). Though no banking law "was written to give state banks the same rights and privileges that might be accorded national banks, either by act of Congress or by the Comptroller" (C. O. Austin, Texas State Banking Commissioner).

it during the cotton-marketing season; the average for five state banks is about 14 per cent of their total loans, and for nine national banks is about 14 per cent of their total loans, though this amount is made abnormally high by one bank having 50 per cent of its loans made in this manner. One private bank states that sometimes as much as 20 per cent of loans are thus made.

Presented herewith is a table (Table III) which shows the percentage which each type of loan forms of the entire amount of local loans of the more than one hundred reporting banks.

TABLE III

HOW THE LOCAL LOANS OF NORTHERN TEXAS COUNTRY BANKS ARE MADE (SPRING, 1926)

Type of Loan	Percentage of Local Loans by National Banks	Percentage of Local Loans by State Banks	Percentage of Local Loans by Private Banks
1. Unsecured single-name promissory notes...	25.8	19.0	11.9
2. Unsecured indorsed promissory notes.....	18.3	15.9	15.2
3. Trade acceptances.....	0.3	0.5	0.0
4. Mortgages on town real estate.....	2.3	2.1	0.4
5. Mortgages on rural real estate.....	4.1	2.3	4.9
6. Notes secured by chattel mortgages.....	40.1	55.8	63.1
7. Notes secured by collateral.....	3.2	1.2	0.5
8. Notes secured by liens on cotton and seed products.....	3.4	1.1	1.8
9. Notes secured by Bills of Lading and warehouse receipts.....	.....	.....	.....

Items 3, trade acceptances; 8, notes secured by loans on cotton and cotton-seed products; and 9, notes secured by bills of lading and warehouse receipts reach larger averages during the fall when crops are being marketed, taking the place of funds loaned in large part on chattel mortgages. It will be borne in mind that these three items, with 7, notes secured by collateral, are not used by many of the banks. But the average for all banks has been taken in order to obtain a fairly definite idea of the relative importance of each method of loaning. The total of each column is not 100 per cent, because in some instances the questionnaires were not completely answered.

The purposes to which these loans are devoted are, of course, numerous. Yet the bulk of them tend to center about four main divisions: (1) production of farm crops; (2) feeding of cattle

for market; (3) purchase of mercantile stocks of goods; (4) actual living expenses of the borrower. These four headings comprise the major portion of the uses to which funds are put, because they typically represent those loans serving the economic interests of this section; though in a few towns in this part of the state, loans for production of oil must play some part. The other ends served by these loans include personal and miscellaneous uses of funds.

National banks, on the average, make 56 per cent of their loans for production of farm crops; state banks average 61 per cent of their loans for this purpose; while private banks average 74.4 per cent for farm production. However, a division of all banks into those in towns of more than 800 inhabitants and those in towns of less than 800 inhabitants better serves the purpose of showing the intimate connection of the smaller town bank with agricultural production. Banks in towns having more than 800 inhabitants loan 50.9 per cent of their funds locally used to farmers, while banks in places of less than 800 inhabitants grant 67 per cent of all loans for this purpose.

As will be noticed from a comparison of these percentages with those of Table III, the greatest number of loans for farm crops are made by those banks lending the highest percentage of funds on chattel mortgages. State banks place 55.8 per cent of all loans on chattel mortgages and devote 61 per cent of all loans to farm production; private banks loan 63.1 per cent in the same manner, while almost 75 per cent of their loans are used in furthering farm interests. National banks, using chattel mortgages as security for 40.1 per cent of all loans, devote 56 per cent to farm use. The latter class of banks, because they are located in larger towns, are somewhat less instrumental in helping agriculture than are the smaller banks.

The feeding of cattle for market is of less importance in borrowing, for the cattle industry is quite small in many of these communities. Furthermore, this form of live-stock production is often financed by cattle commission houses in Fort Worth; particularly is this true in the case of cattle shipped into a community from other sections of the state. One national bank says

that 35 per cent of its loans are used for preparing cattle for market, and a state bank in a ranching section shows 40 per cent of its loans thus utilized; but on the whole, this sort of loan comprises a relatively small part of the funds loaned by these banks. Eighteen state banks have loans made for this purpose, which average 12 per cent of all loans; thirty-two national banks, averaging 11.3 per cent of their aggregate loans, lend for this purpose; while only three private banks show this character of loans, the percentages being 10 per cent, 15 per cent, and 25 per cent of the total amounts loaned.

Loans made to merchants with which to purchase stocks of goods also comprise one of the uses to which funds are put. National banks, because they are located in the larger towns and trade centers, devote more of their funds to this purpose than do state banks. A state banker, located in a small inland village, explains that "the small country-store merchant is a poor risk; therefore, we do not cater to that class of loans." Forty-one national banks assist their local merchants in buying merchandise, for which purpose 12.4 per cent of their loans are used. Seventeen state banks average 7.5 per cent of their loans for merchandise, and five private banks average 8.2 per cent of their loans for the same purpose. The other reporting banks make no loans for financing mercantile goods.

Another need for bank funds is that of providing the actual necessaries of life for the borrower and his family until such time as returns from his crops can be realized. Here, again, there is no definite line of demarcation between money loaned for the production of crops and that loaned for immediate consumption. Many banks state that they make no loans for this specific purpose, while some include loans made both for this purpose and for crop production under the latter head. Others make no effort to segregate the two classes of loans, since funds are used for both purposes frequently by the borrower, regardless of the avowed purpose at the time when the loan is granted. One banker avers that making loans for this purpose is "bad business." On the other hand, two state banks and a national bank make 50 per cent, 43 per cent, and 44 per cent of their loans, respec-

tively, for this use, in addition to loans made for crop production. Fifteen state banks show an average of 20.6 per cent of their loans for this purpose; twenty-five national banks loan for a similar purpose, with an average of 12 per cent of their loans. Four private banks average 17 per cent of their loans for living expenses of the borrower.

The purposes for which the remaining funds are obtained are numerous: such as marketing crops each fall, development of oil possibilities in a few towns, and other special uses of seasonal or miscellaneous character. No effort was made to ascertain exact

TABLE IV

PURPOSES OF THE LOCAL LOANS OF NORTHERN TEXAS COUNTRY BANKS
(SPRING, 1926)

Purpose of Loans	Percentage of Local Loans by National Banks	Percentage of Local Loans by State Banks	Percentage of Local Loans by Private Banks
Production of crops	56.0	61.0	74.4
Feeding of live stock for market	7.5	5.4	5.0
Purchase of mercantile stocks of goods	10.6	3.3	4.1
Actual living expenses of the borrower	6.0	8.0	7.4
Miscellaneous	10.9	22.3	9.3

figures indicative of their importance. Query was made as to whether funds are loaned to co-operative marketing associations; but because there are in the area few, if any, local associations[20] of this nature, this type of loan is practically unknown. It is significant that in towns near oil-producing areas typically less than 50 per cent of the loans of their banks are accounted for in the replies to the questionnaire.

Table IV shows the average percentage of loans made by the banks for the four purposes just discussed. The line between loans made for farm-crop production and for living expenses of the borrower is vaguely drawn and is purely arbitrary.

Little success could attend an effort on the part of these banks to grant loans in such manner that successive maturities

[20] The chief co-operative marketing associations in this section are branches of the Texas Co-operative Marketing Association and Farm Bureau, with headquarters in Dallas, where most of the financing of the work of the organization is done.

would provide a continuous supply of funds. Since, as several bankers explain, the majority of the loans are principally for agricultural purposes and can only be liquidated in the fall, it is impossible to fix the order of maturities at other dates. Typically, farm loans are made to fall due in October and November, as these months constitute the principal marketing season. Commercial paper, similarly purchased for late winter and early spring maturities, is arranged to keep funds utilized until local demand is felt in the spring months. Loans for purposes other than crop production may be regulated as to maturity in accordance with local conditions and the particular characteristics of the individual loan.

Concerning the authorization of loans by these banks, no generally accepted policies are to be found. Practices vary from bank to bank, but usually the active officers make loans not exceeding certain maximum limits (ranging from a few hundred to one thousand dollars) in cases where the character and responsibility of the person applying for the loan are well known. In case of larger amounts and in case of persons less well known, applications for loans are passed upon by the president, or a discount committee, or, in some instances, by the board of directors. Among the smaller banks either the president or vice-president (if either is an active officer) and the cashier are authorized to approve or disapprove a loan, and in case of doubt or indecision, they may consult the board of directors. It is not uncommon among the larger banks to have two or more active vice-presidents, who, with the cashier, have individual power to grant loans within reasonable limits.

The discount committee, loan committee, or finance committee, as it is variously termed, is composed of from three to five directors who meet at certain intervals (depending on the rules of the bank or on the amount of business of the particular season) and pass upon the merits of the larger loans or investigate the responsibility of the person seeking a loan. The advisability of the loan may be referred to the board of directors collectively.

The assistant cashier, in the absence of higher officers, may make loans in small amounts, usually not exceeding $200. But in

each bank the plan of granting loans depends upon the acquaintance of the various officers of the bank with the people and with the economic interests of the community; and accordingly authority is vested in them in proportion to their experience and ability rather than in accord with some general arbitrary rules.

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[*To be continued*]

THE PLACE OF TECHNOLOGY IN THE BUSINESS CURRICULUM

COLLEGIATE schools of business have from the beginning been compelled to face certain serious issues not encountered by the older and more firmly rooted professional schools of medicine, law, and engineering. The physician, the lawyer, and the engineer, each deals with a fairly homogeneous subject matter. The boundaries of each of these fields are clearly marked, and in consequence it has been a comparatively simple task to draw up a reasonably comprehensive educational program for the student who is being prepared to take his place in one of these professions.

Business, by way of contrast, embraces almost all economic activity and is as catholic in its interests as the science of economics itself. At one point it is conditioned by biological factors; at another psychological influences must be explained; and at still another its form is determined by the physical environment. To understand its mysteries one must become proficient in the use of such tools as accounting and statistical method provides. Many of its cherished traditions and practices are to be explained only in the light of history and cannot be understood until some conception of the evolution of economic institutions and ideas has been acquired. Its setting is organized society—a society which has found it necessary to establish certain legalistic inhibitions and mandates for its own preservation—and the student of business must possess some appreciation of this legal structure. The physicist, the chemist, and the bacteriologist have also contributed. Business has been profoundly influenced by the technological turn which their labors have given to modern life. The relation of master and servant, of employer and employee, of creditor and debtor, of owner and manager—all have been and are being touched by this latter development in a manner which the student of business cannot fully comprehend

until he has gained some knowledge of the technological borderlands of his field.

Much progress has been made in coping with this problem of diverse interests. Courses in business psychology have been developed. Accounting and statistics, which to the perplexed student often have meant little more than a juggling of figures according to "rule of thumb," have in the hands of enlightened instructors become indispensable tools of economic research and business management. The bond between economics and business has been strengthened, and the orthodox theory courses have been redrawn in more realistic proportions to fit the needs of the student of business. Law libraries have been invaded and their materials have been sifted and reclassified in order to supply a suitable legal background for the study of economics and business. Seemingly it is only the technological background that has been neglected or almost neglected—a rather strange situation when the part played by engineering science in our modern economic organization is remembered.

In claiming some recognition for technology in the business curriculum it obviously is not necessary to propose that we run counter to schools of engineering and departments of chemistry and physics, or to call into question the methods, content, or aims of the technical courses which these fields of thought ordinarily offer. The interest of the social scientist and the student of business in this field is different in degree, if not indeed in kind, from that of the chemist, the physicist, or the engineer. Different interpretations, all correct and useful in their way, are placed upon technological developments, and a scientific fact means to one student one thing, to another something else, depending upon the use he can make of it in his chosen field.

The history of the modern steel industry dating from the epoch-making discoveries of Sir Henry Bessemer and others about the middle of the last century presents to the metallurgist visions of a long series of tedious experiments and triumphs in the laboratory by which the effect of various combinations of elements has been established and the technique of postive control so necessary for continuous production of uniform quality has

been perfected. To the engineer it suggests perhaps a long list of mechanical improvements by which the costs of production have been lowered, the standard of quality raised, and the output increased. The social scientist may perhaps be most impressed by the fact that this development has given industry a most important material of construction. The lack of suitable materials which James Watt so much regretted in his day has been abundantly supplied, with far-reaching results. To another may be presented a picture of the struggles of the worker to better his condition, temporarily thwarted at every step by physical obstacles which engineering science often has been able to remove. To still another this development is illustrative of the growing importance of overhead costs, increasing the risks of management, encouraging continuity of output, and making centralized control of the sources of raw material and the pooling of production facilities inevitable.

Within the last five years much attention has been directed toward certain chrome alloys popularly known as stainless steels. To the metallurgist these present an interesting phase of the well-known phenomenon that the combination of two or more elements under proper conditions will set in motion certain chemical interactions often resulting in a material possessing properties not observed in any of the constituent elements when taken alone. To the engineer these discoveries present the problem of economic production and utilization for structural purposes of a new material, while to the economist they perhaps suggest a possible means of escape from the serious waste by rust which exacts untold millions from industry each year.

Experimentation with the acetylene flame and the electric arc has opened for the chemist and the physicist an interesting field of investigation concerning the phenomena of welding. To the engineer and machine designer it has presented the possibility of many innovations in manufacturing method and the substitution of fabricated steel shapes for castings. To the social scientist its chief significance may be indicated by the somewhat premature prediction that it ultimately will lead to the virtual passing of an entire industry and the destruction or serious

modification of the foundry and structural iron workers' crafts, to the elimination of much of the noise nuisance attending building construction, and incidentally to the creating of new working conditions of uncertain biological effect upon the worker.

The technology of refrigeration is of obvious significance to the bacteriologist, the chemist, and the physicist, and is of concern to the engineer and the social scientist as well. The developments of the future in this interesting field perhaps in large measure rest with the chemist and physicist, who must assume responsibility for the provision of better refrigerants, but the engineer will also doubtless play a part by contributing more efficient refrigerating equipment, and the achievements of all three may in turn be of great interest to the practical economist by virtue of their effect upon marketing methods for perishable products, and by causing the gradual transfer, already begun, of a large sector of the refrigerating industry from the factory to the household, and the disappearance of the picturesque ice wagon from our streets.

Such illustrations (which might be multiplied indefinitely) serve perhaps to emphasize the fact that the social scientist and the student of business, as well as the chemist and the engineer, have some interest in technology. Each, it may be, views the matter from a different angle and thus is interested in a different group of facts, but it is, nevertheless, the same technology. It is possible that different interests justify different methods of study and presentation, perhaps an entirely different subject matter, but this of itself is surely no reason for ignoring it in the educational program of a school of business. Nor is it the intention unduly to emphasize or overrate the importance of giving students of business some conception of technology at the expense of other equally or more essential disciplines. It may as well be admitted at the outset that technology, like law, must necessarily occupy a peripheral or at most a background position in training for business. The business executive cannot dispense with the services of experts in either of these fields, and the training of such expert advisers must be left to schools of law and engineering.

But at the same time there is no need to close our eyes to the fact that the business executive for whose training the university school of business must presumably assume some responsibility, and the student of economics, are often confronted by problems possessing technological aspects which they ought by training to be able to recognize if for no other reason than that, as is often stated, they can discern when expert advice is essential.

In so far as technology is concerned, recognition of this intimate relationship has been confined to such attention as has been given it in so-called production courses, of which one or more (rarely more than two or three) appear in most business curricula, and which, judging from their titles, are supposed to possess a distinct managerial flavor.[1] These superficial offerings, usually even more superficial in fact than the courses ordinarily listed by schools of engineering in what may be called purely

[1] An examination of the bulletins of schools of business reveals the fact that the minority, approximately 20 per cent, apparently offer no courses dealing even remotely with technology. In most instances the schools falling in this group are comparatively new and do not offer a very pretentious program in any field of business.

The majority apparently offer from one to three courses in the general field of production. As examples of the latter group the offerings at Harvard and Wharton are listed below:

Harvard courses in the production field:

1. Industrial Management (throughout one year, one-fourth of the student's time).

2. Manufacturing (considers the history of manufacturing, technique, organization, and applications of economics and engineering; one-half year).

3. Manufacturing Research (field course; one-half year).

At Wharton:

1. Resources and Industries of United States (geography).

2. Manufacturing Industries in the United States (3 hours. Apparently largely geographical).

3. Industrial Management (3 hours; 1 semester).

4. Field Work in Industry (3 hours; 1 semester).

5. Industrial Research.

A possible exception to the usual program may be represented by those few which offer a course similar to that listed under Commerce at the University of North Carolina, entitled, "Resources and Industries." This course as described is "a geographical, technological, and economic study of resources and commodities, together with a brief outline of the most important processes of basic industries (5 hours; throughout 1 year)." This description may, of course, mean much or little.

business subjects,[2] have seemingly often had as their purpose little more than the forestalling of possible criticism that one important department of business was ignored in an otherwise more or less complete functional scheme of administrative courses.

Few would contend, and least of all those responsible for the courses themselves, that the subject matter presented in even the most pretentious programs in the production field is an adequate training for future executives in the production department of a manufacturing enterprise. This, no doubt, is somewhat in contrast with the aims and pretensions of usual offerings in accounting, finance, marketing, and personnel. The array of courses in these functional fields presumably is sufficiently comprehensive to justify the belief that when pursued conscientiously an adequate preliminary training will have been acquired by the student, who in consequence may be expected to make the most of his apprenticeship years in business. It is true that the opportunity for study offered by a single functional field is not considered adequate even for the specialist, and hence the student is discouraged from confining his inquiries to his specialty alone, and is expected to register for a certain minimum of required orientation courses in all fields. The latter requirement supposedly owes its origin in part at least to the assumption that he cannot fully appreciate his own field until he understands something of the problems of related fields, and apparently it is

[2] From an examination of engineering school bulletins the offerings in business training may be summed up as follows: (1) A few, less than one-fourth, seemingly offer no courses in business subjects. (2) The majority offer some courses of this nature, usually two or three. Of these the offerings at the engineering school at Johns Hopkins may be taken as fairly typical, including: (*a*) Political Economy 1 (3 hours; during the Junior year). (*b*) Production Methods (5 hours; 1 semester; Junior year). (*c*) Industrial Organization and Contracts (3 hours; 1 semester; Senior year). (3) A few who offer a combined engineering and business course.

Examples of this plan are: (*a*) The five-year combined engineering and business administration course at Harvard leading to the degree of B.S. in Engineering and B.A. Approximately three-fifths of the fourth and fifth years is in business. (*b*) The four-year Engineering Administration Course at Massachusetts Institute of Technology, in which approximately one-fourth of the time in the second, third, and fourth years is given to business subjects. (*c*) The combined five-year course at the University of Cincinnati, in which the major emphasis is on business.

this valid contention which is the chief justification for such courses as are offered in the production field in the typical business curriculum.

These are designed not to train future production executives, but merely to give some conception of the problems of the production manager to the student whose major interest may lie in accounting, finance, personnel, or marketing, thereby enabling him better to understand the interfunctional relationships of his own field. To the writer this seems a perfectly justifiable view of production courses in the business curriculum. The specialist in the production field often requires a very technical background which scarcely can be acquired except by an intensive engineering course, and in consequence industry must probably continue to draw its most likely recruits for the production department from the engineering school.[3]

If this thesis is acceptable, namely, that it is the function of our courses in technology or production primarily to supplement the training of prospective accountants, specialists in marketing or finance, or personnel administrators rather than to offer opportunity for specialization in the production field itself, it appears that a thorough canvas of what will best forward these ends ought to be made. It would seem that the adequacy of what has as yet been attempted in schools of business in the way of study of production or technology is open to serious question. It is probable that rarely, if ever, does the student gain either a comprehensive understanding of the really important aspects of production management or a sufficient appreciation of technology to recognize an engineering problem when he encounters it in his own field.

Nor is it fair to lay the entire blame for this defect at the

[3] There is, of course, the possibility that certain strategically located schools of business might eventually perform a useful service to industry by offering a program of graduate courses designed to enable the engineering school graduate to supplement his technical background with an intensive training in business with the major emphasis on production management preliminary to assuming his place in industry. By so doing schools of business would be co-operating, not competing, with the engineering schools after a fashion which in some respects might prove superior to the combined business and engineering courses already mentioned which presumably aim at the same result.

door of the instructor or to conclude that the subject matter ordinarily presented is irrelevant. The writer firmly believes that there is a place for a course in production management in a scheme involving the organization of managerial courses on a functional basis. But we must not expect too much from such a course. It is probable that in no other field is the instructor confronted at the beginning of a course by a group of students who through no fault of their own have so scant a factual background on which to base a discussion of managerial problems or departmental techniques. More often than not the student has never been inside a factory. Little of an exact nature is known concerning the characteristics and properties of materials and commodities. Seldom does he have even the faintest conception of technological processes and methods of manufacture in our most important industries. The function of common types of machine tools and mechanical devices, their peculiar characteristics, and the limitations they place on manufacturing operations are understood scarcely at all. And yet with this background, or rather lack of it, instructor and student supposedly proceed to discuss the problems of production management.

The remedy for this embarrassing situation clearly lies in providing the student with some previous acquaintance with this technological background. In aiming at this it is important that we bear in mind that such studies are undertaken, not merely as stepping-stones to the courses in production management, but also as means of providing certain tool-knowledge of value to all students of business. Such studies, which should presumably come very early in the undergraduate program, might possibly deal with the following:

I. The scientific background of technology. Consideration of the natural sciences which form the background or source of all technological activity and an explanation of their relation to manufacturing.

II. Basic technological processes and means. Considered from three angles: (*a*) Raw materials or natural resources. (*b*) Basic processes, which are in reality the application of principles formulated by the chemist, physicist, and bacteriologist.

(*c*) Tools, which are the mechanical means employed in applying the basic processes to the transformation of resources into usable goods.

III. Applications to specific industries with particular emphasis upon the resulting commodities of commerce. An attempt to classify industries both as to the thing accomplished, the commodity, and the method employed in accomplishing it. An explanation of how the methods and means considered under II are utilized in the production of finished commodities.

This outline is elaborated in Chart I, in which the three main divisions just mentioned are shown in parallel columns. The

CHART I

SUGGESTED OUTLINE OF THE SUBJECT MATTER OF THE TECHNOLOGY OF PRODUCTION

I. The Scientific Background		II. Technological Processes and Means	III. Industrial Applications
Geography Geology Zoölogy Botany	Natural resources	1. *Basic raw materials* (For suggested classification see Chart II)	The application of technological processes and means in specific industries with special emphasis on resulting commodities. (For suggested classification of these industries see Chart V.)
Chemistry Physics Bacteriology	Scientific phenomena	2. *Basic technological processes* (For suggested classification see Chart III)	
Theoretical and applied mechanics		3. *Mechanical aids (tools)* (For suggested classification see Chart IV)	

first, which merely lists the natural sciences upon which technology is based, may perhaps be taken for granted on the assumption that the student probably has had some introduction to these sciences in his secondary-school preparation or in previous collegiate courses. At most, this section of the inquiry might be confined to a series of lectures or readings on the relation of science to industry.

The second section attacks the subject matter from three essential angles. The first, dealing with natural resources as elaborated in Chart II, and representing applications of geography,

botany, geology, and closely allied sciences, might possibly consist of an investigation of such matters as the relative importance and significance of leading resources, their natural origins, the influence of this natural distribution upon the development of

CHART II

CLASSIFICATION OF BASIC RAW MATERIALS REFERRED TO IN CHART I

Minerals	Metallic ores	Ferric	
		Non-ferric	Copper
			Zinc
			Lead
			Tin
			Aluminum
			Gold
			Silver
	Non-metallic materials		Stone
			Sand
			Clay
			Coal
			Mineral oils and tars
Agricultural	Animal		Hides and skins
			Fibers
			Meat
			Milk
			Oils and fats
			Misc. by-products
	Vegetal		Cereals
			Fibers
			Gums, oils, and juices
			Fruits
			Edible vegetables
			Medicinal plants and herbs
Nemoracultural			Lumber
			Pulp
			Misc. forest products
Fishing and trapping			Fish
			Skins and furs
			Oils
Non-material resources			Water power

our transportation and marketing agencies, and in turn the influence of existing transportation agencies upon their utilization, existing property rights in these resources, their influence upon past and probable future trends of industrial development and localization, and kindred topics of obvious interest to students of business.

CHART III

CLASSIFICATION OF BASIC TECHNOLOGICAL PROCESSES REFERRED TO IN CHART I

Chemical	Simple chemical interactions		Bleaching and dyeing (some)
			Precipitation (some)
			Saponification
			Corrosion
			Double decomposition (where not included in above)
	Physico-chemical interactions	Pyro-chemical	Combustion
			Baking
			Calcination
			Cooking
			Reduction
			Vitrification
			Metalic compounds
		Photo-chemical	
		Electro-chemical	Electrolysis
Physical	Thermo-physical interactions		Annealing
			Calendering
			Tempering
			Condensation
			Vaporization
			Fusion
			Solidification
	Electro-physical interactions		Electro-magnetic
			Electro-thermal
	Physico-molecular interactions		Absorption
			Infusion
			Crystallization
			Solution (sometimes chemical)
	Purely mechanical form changes		Abrasion
			Compression
			Cutting
			Extruding
			Forging
			Pulverizing
			Pulping
			Rolling
	Mechanical-manipulative processes		Aeration
			Assembly
			Coating
			Felting
			Imprinting
			Mixing
			Spinning
			Weaving
			Calibrating
	Mechanical-separative processes		Centrifugal
			Filtration
			Flotation
			Sifting
Bacteriological	Bacteria culture		Fermentation
			Putrefaction
	Bacteria destruction		Sterilization
			Refrigeration
			Antiseptic
			Desiccation

The second subsection represents an attempt to classify and trace the scientific origin of basic technological processes, as indicated in Chart III. Many of these processes, it will immediately be noted, are common to widely different industries. By presenting them thus as basic scientific applications rather than as incidents in the manufacturing processes of specific industries it is felt that the scientific background of all industry may more readily be grasped, and at the same time much repetition can be avoided when a study of the nature of specific industrial processes is undertaken in section III.

The third subsection deals with a classification of the tools of industry, as shown in Chart IV. In this part of the study the function and operating characteristics of typical mechanical devices, their general significance and the extent to which they supplement human labor, their limitations, and the new problems which their utilization has introduced for employer and employee might possibly be presented.

Section III suggests the possibility of applying all three elements appearing in section II to specific industrial situations, with particular emphasis upon their influence with respect to properties and characteristics of commodities which form the subject matter of commerce. A possible classification of industries is presented in Chart V.

While the results achieved in any course of study must always in large measure rest with the instructor, it is believed that this method of attack may possess the following merits: (1) It would give the student (who may be expected to have had little previous contact with the physical sciences) some conception of the fundamental relation of these sciences to technological processes. (2) It would give him an orderly and somewhat comprehensive view of basic manufacturing processes and their applications in specific industrial situations. (3) The conception thus secured would give him an insight into the properties and characteristics of the commodities of commerce, which is, of course, one aim of the discipline.

The writer is frank to admit that in making these suggestions he may have been too much influenced by his notions as

CHART IV

Classification of Mechanical Aids or Tools Referred to in Chart I

- **Power provision devises**
  - Power generation (prime movers and secondary apparatus)
    - Steam engines (and boilers)
    - Internal combustion engines
    - Hydraulic engines
    - Dynamos
    - Compressors and vacuum pumps
  - Power transmission and storage
    - Storage batteries
    - Electric transmission
      - Wiring
      - Transformers
      - Condensers
      - Motors
    - Belts and shafting
    - Pressure tanks and pipe lines
- **Temperature manipulation devices**
  - Heating devices
    - Blast furnaces
    - Open hearth furnaces
    - Reverberatory furnaces
    - Retorts and converters
    - Ovens and kilns
    - Cookers
    - Boilers
  - Cooling devices
    - Condensers
    - Atomizers
    - Radiators
    - Fans
- **Material fashioning devices**
  - Pressure shaping tools
    - Hammers
    - Presses
    - Rolling mills
    - Inflators and deflators
  - Molding tools
    - Molds, cores, etc.
  - Cutting tools
    - Shears
    - Saws
    - Planers and millers
    - Lathes
    - Drills and boring mills
    - Punch presses
  - Abrasive tools
    - Polishing and grinding wheels
    - Sanding belts
- **Material combination and separation devices**
  - Fabricating tools
    - Sewing machines
    - Riveting and welding machines
  - Fiber weaving tools
    - Looms
    - Spinning frames
    - Felting machines
    - Knitting machinery
  - Coating and printing tools
    - Dipping vats
    - Sprayers
    - Printing presses
  - Crushing and mixing tools
    - Crushers and grinding mills
    - Mixers
  - Separators and graders
    - Centrifugal separators
    - Bolting and sifting machines
    - Settling basins and filters
    - Stills
- **Material handling devices**
  - Transportation tools
    - Cranes and derricks
    - Trucks, cars, and trailers
    - Mechanical conveyors
    - Pumps and pipe lines
    - Blowers
  - Containers
    - Tanks
    - Vats
    - Bins, etc.

CHART V

Classification of Industries Referred to in Chart I

Conditional processes—involving structural changes	Brick making Tanning Dairy products Ice Bleacheries Pulp mills
Extractive processes—involving the mechanical separation of some ingredient	Milling Sugar Syrups Starch Vegetable oils Salt Chemicals (some)
Fabricative processes—involving the mechanical assembly of parts in an organic whole	Machine building Textiles: Wool, Cotton, Silk, Cordage Paper Furniture Precision instruments Musical instruments Shoe manufacture Clothing manufacture Tires, rubber goods
Synthetic processes—involving the combination (usually chemical) of elements resulting in a homogeneous compound or mixture	Fertilizer Soap Cement Bread and pastry Confectionery Alloys Glass Paint and varnish Glue Canning and preserving Chemicals (some) Explosives and pyrophoric materials
Analytic processes—involving chemical separation into constituent elements or parts	Metallurgical: Iron, Copper, Lead, Zinc, Tin Coke and gas Oil refining Chemicals (some) Drugs (some)
Manipulative processes—involving the mechanical change of outward form without structural transformation	Lumbering Stone working Slaughtering and meat packing Tobacco manufacturing Printing Photography and lithography Lapidary Paper goods—box Metal working: Rolling mills, Machine shops, Foundries, Forge shops
Electro-dynamic processes—involving the production, transmission, and conversion of electrical energy	Power and light generation

to what might constitute an adequate background for a serious study of production management, and in view of the limited function of such studies in the business curriculum many may feel that it is proposed to "drag in" much material which has little place in preparation for business. If, indeed, this factual background has no significance except as partial preparation for attacking administrative problems of production, this conclusion is probably correct. But is this necessarily the case?

Many profess to see a very close relation between the characteristics of commodities and many problems of marketing. The same is also true, to some extent at least, regarding transportation. It requires no great stretch of imagination to conclude that the nature of manufacturing processes and the equipment employed might be closely related to many problems arising in connection with the financing of an enterprise. The same may possibly be true of many problems of valuation and cost allocation which confront the accountant. And many of the relations between employer and employee with which the personnel administrator deals certainly are influenced by the factory environment amid which these relationships must be maintained. If any light may be thrown on any of the problems in these fields by providing some such factual background which is at present often ignored, the case for such an experiment is obviously greatly strengthened.

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THE FORMATIVE PERIOD OF HIGHER COMMERCIAL EDUCATION IN AMERICAN UNIVERSITIES

IN DISCUSSING commercial education, Sir William Ashley described the movement for business education in the universities as "quite certainly the largest of the waves passing over the American Universities" and offered as a reason for the movement the force of public opinion which deems it a function of the university to serve the needs of the community. Once that function is accepted as legitimate, the institution for higher learning cannot ignore the great field of business in a country where "business bulks more largely in men's thought than in an older country."[1] The movement for collegiate business education may well be considered a "wave" in the United States, if quantity and rapidity of development be the criteria. But the movement has a more permanent place in the educational world than such a term might imply. Originating as it did to meet a pressing need, growing to the size that it has, supported as it is not only by the experience of this country but of European nations as well, it cannot wisely be treated as a passing fad soon to be replaced by some other kind of educational experimentation.

"All professional schools seem to have been founded on recognition of the need for organized educational provision as a substitute for earlier exclusive reliance on apprenticeship arrangements."[2] In the case of the older professional schools such as those of law and medicine, the transition from apprenticeship to university affiliation was frequently and indeed usually made through an intermediate stage in which proprietary-commercial enterprises were the characteristic form of organization. Mr. Flexner, in his survey of medical education made in 1910, recalls

[1] Sir William Ashley, *Commercial Education* (London: Williams & Norgate, Ltd., 1926), p. 101.

[2] Roswell C. McCrea, "Economics in the Business Curriculum," *Journal of Political Economy*, XXXIV (1926), 219.

this unfortunate period in the history and early development of medical education in the United States. He refers to the establishment of schools of medicine in connection with the University of Pennsylvania, King's College, Harvard, Dartmouth, all near the close of the eighteenth century, and at Yale in 1910. He says:

> But with the foundation early in the nineteenth century at Baltimore of a proprietary school, the so-called medical department of the so-called University of Maryland, a harmful precedent was established. Before that a college of medicine had been a branch growing out of the living university trunk. This organic connection guaranteed certain standards and ideals, modest enough at that time, but destined to a development which medical education could, as experience proved, ill afford to forego. . . . . Since that day medical colleges have multiplied without restraint, now by fusion, now by sheer spontaneous generation.[3]

There are three reasons, perhaps more, why collegiate education for business has not experienced and will not experience the misfortunes of this "spontaneous generation." In the first place, education for business at the higher level, being comparatively recent, has been afforded an opportunity to benefit by the experience of the older professions. Those who have organized schools of higher business education have known in general terms the history of the earlier professional schools and have been predisposed to university affiliation from the outset. The university authorities, on their part, have had the same predisposition for precisely similar reasons.

In the second place, the university has become firmly established, and although higher education is, fortunately, not standardized nor free from experimentation, it is, nevertheless, no longer in the pioneer period of its development as it was when medical education first became a part of it. The living trunk of the university is now better able to bear the branch of commercial education and is able to bestow upon it the standards and tradition which the years have brought. The Graduate School of Business Administration at Harvard, for example, was established 271 years after the foundation of the original university

[3] Abraham Flexner, *Medical Education in the United States and Canada* (report of the Carnegie Foundation for the Advancement of Teaching), 1910.

and 125 years after the establishment of the Harvard Medical School.

In the third place, it has so happened in the development of business education that the proprietary-commercial institution has occupied itself with the quite technical and subordinate aspects of the work. In business education, the schools and so-called "colleges" with proprietary-vocational aims preceded by fifty years the establishment of the first business school of collegiate grade, and they have served and will continue to serve a purpose quite different from that of the collegiate school. The "commercial colleges" of the well-known type, privately owned (and later the commercial courses of the public and private high school), have met a very pressing demand by offering such tool subjects as shorthand, typewriting, bookkeeping, business English; and have specialized in preparing clerks, bookkeepers, stenographers, and typists for entrance into business.

This situation has made it easy and natural for the university and collegiate school of business to focus its attention more on professional and social ends; to place an emphasis upon dealing with the complicated social organization in which the business man does his work; to accept as its objective the training of persons with a social point of view for executive and professional positions in business.[4] Of course, an organization which accepted such an objective could be easily and naturally absorbed into the university system. This situation and the reasons mentioned earlier have brought it about that few American collegiate schools of business have been founded except in connection with a college or university.

Thus far it has appeared that the development of higher education has been of such a character as to enable the collegiate school of business to become an integral part of the educational

[4] The graduates of these schools must expect to begin in subordinate positions not unlike those held by the graduates of the proprietary vocational school; but ultimately the former will become responsible executives or professional men or technical experts, such as accountants and statisticians. Entrance into the business world is in no way dependent upon certification or graduation from a school of business. But the graduate of a collegiate school of business, it is believed, finds himself better fitted to meet and solve the problems of the social, industrial, and commercial organization of the day.

system with a minimum of friction and difficulty. It remains to be noticed that the character of economic development has been such as to create a real need for this type of education.

We have come a long way from the days of the craft system when a young man desirous of entering a business served as an apprentice to a master-craftsman, living in the master's home and working with him until he knew the business completely. The business of that time was operated on so small a scale that the master could give his personal attention to the instruction of the apprentice along technical, social, political, and cultural lines; and, on the other hand, business of that type could readily be learned under the apprenticeship system. The productive processes involved were simple and of an easily learned technique; the market was narrow, local, and readily understood; the social relations were simple and much ruled by custom. A person of ordinary intelligence could readily learn by doing.

How all this was changed after the opening of the modern era is one of the commonplaces of history. New worlds were opened up; the ocean became a source of communication. Foreign trade was greatly expanded, preceded by a continually progressing and increasingly efficient domestic trade. This wider market caused an increased demand for goods which could not be met by the simple and slow production of the craft system. Labor-saving devices resulted; inventions brought about a transition from a hand to a machine process, and with the introduction of power-driven machinery, there was a transition from a domestic to a factory system of production. The new type of business did not lend itself to an apprenticeship system of training. "Apprenticeship was divested of its educational features both trade and civic as a result of the Industrial Revolution. . . . . The apprentice found himself a wage-earner with greater freedom, greater opportunity, and greater danger as his lot. The tasks of the employer were becoming more and more exclusively those of the business man, his immediate concern buying and marketing rather than craftsmanship."[5]

[5] Paul H. Douglas, *American Apprenticeship and Industrial Education*, "Columbia University Series," XC (1921), 54.

Looking back from the vantage point of a century and a half of history, it is evident that technical education rose, in part, to meet the situation which resulted from the breakdown of apprenticeship. France and Germany preceded the United States in the establishment of technical schools, our first being founded in 1802 at the United States Military Academy at West Point. In 1824 the Rensselaer Polytechnic Institute was begun, largely as a manual-labor school. In 1846 the United States organized a college for naval engineering at Annapolis, and in 1861 the Massachusetts Institute of Technology was founded.[6] The next year technical education in America received a tremendous impetus through the passage by Congress of the Morrill Land-Grant-College Act which provided for the creation of colleges of engineering, agriculture, and military science, in each of the states.

So also, the breakdown of apprenticeship is, in part, responsible for the rise of educational institutions to give training in marketing and internal business administration. The need for such institutions was first reflected in a literature dealing with the keeping of books and accounts. The trade and commerce of an earlier day had resulted in developing in Italy a considerable body of practices and literature in commercial law, business organization, bookkeeping, and banking; and it was from Italy that England and the other countries of Europe learned their early lessons in commercial education. "Accounting, like commercial arithmetic, appears to have had its beginning in Italy. . . . . Very good records have been found which were kept by Venetian merchants early in the fourteen hundreds, and from Italy came the first textbooks which carried a knowledge of bookkeeping and accounting to the business men of other lands."[7]

The first English treatise on this subject seems to have made its appearance in Edinburgh in 1736. The book, by John Muir, was entitled *Bookkeeping Methodized: A Methodical Treatise on Merchant Accounts according to Italian form.* In 1760 a

[6] E. P. Cubberley, *The History of Education* (Houghton Mifflin, 1920), p. 298.

[7] Marshall and Lyon, *Our Economic Organization* (Macmillan, 1921), pp. 60, 100.

sixth edition appeared with an Appendix containing, as the Preface puts it, "A vast amount of useful information for the benefit of the young merchants, who trade to, or settle in Virginia and Maryland, exhibiting at great length the commerce of those colonies with the method of keeping accounts used by the storekeepers there." An even more interesting book appeared in the year before Muir brought out his sixth edition, the title-page of which reads, *"The Modern Elements of Numeral Arithmetic,* containing so much of common and decimal arithmetic as is necessary to perform the various calculations of the Compting-House and the Custom-House with the greatest ease and dispatch together with the demonstration of the Theory and Practice of the several branches of Commercial Arithmetic so disposed as to suit the convenience and capacities of children." The book contains chapters on "Fellowship," "Custom and Excise," and "Tret and Tare," which is defined as "that process by which merchants compendiously find and deduct their allowance and commissions."[8] The first American publication was in Philadelphia in 1789, a book by Thomas Dilworth entitled *The Young Bookkeeper's Assistant.*[9]

Turning from this literary manifestation of the need of formal commercial education to the actual establishment of schools —as indicated earlier, the first schools were of the proprietary-vocational type designed to prepare for the routine positions in business. The first such school in America was organized by Mr. Benjamin Foster, who advertised as "a Teacher of Writing and Bookkeeping, Author of the *Counting House Assistant,* the *Merchants' Manual,* the *Penman's Guide and System of Penmanship.*"[10] In 1840 the Hartford Commercial Academy was founded,[11] and by 1853 there was in operation "a chain of business colleges which was headed by H. B. Bryant and H. D. Spencer. Before ten years had elapsed more than fifty schools were working under one management."[12] The great demand for persons

[8] C. C. Reigner, "Beginnings of the Commercial Schools," *Education,* XLII, 133–35.

[9] *Ibid.,* p. 135. [10] *Ibid.,* p. 136. [11] *Ibid.*

[12] Frederick W. Roman, *The Industrial and Commercial Schools of the United States and Germany* (Putnam, 1915), p. 246.

who had command of the humbler business techniques warranted the development and rapid spread of these "commercial colleges." Edmund J. James, a pioneer in commercial education of collegiate grade, said in his monograph on *Commercial Education* written in 1899:

> If the average American were asked what opportunities exist in the United States for training toward a business career, his immediate and unhesitating answer would refer to the "commercial college," and probably to that alone. This institution is peculiarly American; nothing exactly like it is known in other countries. It embodies the defects and excellencies of the American character, and typifies in itself a certain stage in our development. Its almost spontaneous origin, its rapid and wide diffusion, its rough adaptation of primitive material to the satisfying of immediate and pressing needs, its utter disregard of all save the direct answer to current demand, and then gradually its recognition of present inadequacy and its determination toward broader, fuller usefulness, these characteristics of the commercial college mark it as essentially the product of a young, eager and gradually maturing people. . . . . The man who first noted a need for business instruction waited not to formulate the problem and to discuss the solution, but bent himself straight-away to furnish the opportunity and to meet the demand.
>
> The private, elementary, unendowed, unassisted and uninspected educational undertaking, performed a very important function in our American educational system. They set out to give the girl or boy, man or woman who desired to secure a position as clerk or bookkeeper just such assistance as was needed to prepare for such work. . . . . That it did this work well at least to the satisfaction of its pupils is sufficiently attested by the hundreds of thousands of people who have attended the schools.[13]

For a long time the private institution held practically a monopoly in this field. Toward the close of the nineteenth century, however, commercial instruction was offered in the American public schools, again as a result of the demand for this type of training. The instruction was at first quite meager, both instructors and materials of instruction being largely secured from the private "business colleges." Later, commercial departments formed a recognized division of most high schools; and by 1913 many of the larger cities maintained separate high schools of

[13] Edmund J. James, *Commercial Education*, "Monographs on Education in the United States" (ed. Nicholas Murray Butler, 1899), pp. 5, 17.

commerce.[14] These divisions and schools in the public educational system, together with the private "commercial college," have played and will continue to play their part in American business education.

The collegiate school of business is but a later and more mature manifestation of an institutional response to the need of formal educational preparation for business. "As the industrial life of the nation has become more diversified, its parts narrower, and its processes more concealed, new and more extended training has been called for to prepare young people to meet the intricacies and interdependence of political and industrial and social groups and to point out to them the importance of each one's part in the national and industrial organization."[15] The prevailing attitude with reference to the function of collegiate or university education made it easy to associate this more extended training with the university. There are in the United States today nearly two hundred of these schools or departments operating in conjunction with as many colleges and universities. In spite of the fact that there is great diversity in the organization of these schools, their common purpose is to prepare persons for entrance into the business world.

The first definite proposal for a school of business of collegiate grade in America seems to have been in 1869.[16] The Higher Institute of Commerce at Antwerp claims to be the first commercial college in the world and dates back to 1852.[17] "The second, in order of time, is that of Mulhause, in Alsace; and the higher school at Venice is the third and was established in 1868."[18] Until recently it has been thought that the first proposal for a school in America came in 1881 from Mr. Joseph Wharton; but a manuscript of a report of President Robert E.

[14] James J. Sheppard, "The Place of the High School in Commercial Education," *Journal of Political Economy*, XXI, 209.

[15] E. P. Cubberley, *op. cit.*, p. 791.

[16] C. S. Marsh, "General Lee and a School of Commerce," *Journal of Political Economy*, XXXIV (October, 1926), 657.

[17] Sir William Ashley, *op. cit.*, p. 126.

[18] S. C. Longobardi, "Higher Commercial Education in Italy," *Journal of Political Economy*, XXXV (February, 1927), 39–91.

Lee to the trustees of Washington College (later Washington and Lee University) has been found, and it appears that on January 8, 1869, he recommended the establishment of a school of commerce at that institution. Since Washington College at that time had in its preparatory department a business school teaching penmanship and bookkeeping, the recommendation of President Lee was for a course "much more advanced." In his report to the trustees he says:

> In recommending a Commercial School, it is proposed not merely to give instruction in bookkeeping and the forms and details of business, but to teach the principles of commerce, economy, trade and mercantile law. Such a school may with great advantage be added to the schools of the college, as many students may, by its means, prepare themselves for business pursuits while obtaining such scientific and literary culture in the other schools as time and opportunity may allow.[19]

President Lee died in 1870, and the school of commerce as he proposed it was not put in operation. The present School of Commerce at Washington and Lee University was not established until 1906.

The first collegiate school of business to be established in the United States was the Wharton School of Finance and Economy.[20] This school was founded in 1881 through the generosity of Mr. Joseph Wharton, a Philadelphia merchant and manufacturer, who gave to the University of Pennsylvania the sum of one hundred thousand dollars in order to establish a department in that institution for higher commercial training. The object of the school was "to provide for young men special means of training and of correct instruction in the knowledge and in the arts of modern Finance and Economy, both public and private, in order that, being well informed and free from delusions upon these important subjects, they may either serve the community skillfully as well as faithfully in offices of trust, or, remaining in private

[19] C. S. Marsh, *op. cit.*, pp. 657–59.

[20] In the Appendix there are reproduced pages from the initial circulars of The Wharton School of Finance and Economy at The University of Pennsylvania; The College of Commerce and Administration at The University of Chicago; The College of Commerce at The University of California; The School of Commerce at The University of Wisconsin; and The Amos Tuck School at Dartmouth College.

life, may prudently manage their own affairs and aid in maintaining sound financial morality: in short, to establish means for imparting a liberal education in all matters concerning Finance and Economy."[21]

The college as first organized was not successful.[22] The faculty was composed of men who were not in sympathy with the proposal of Mr. Wharton—men taken from the liberal-arts college to teach subjects about which they knew little; men with classical training who were opposed to the idea of a college education that was practical. In the fall of 1883 the work was put on a different basis by the installation of professors and instructors versed in the fields they were to teach, and to them was intrusted the task of "working out a university curriculum which it would be worth the while of a future business man to complete before he took up the actual work in the counting-house, bank, the insurance office, the railway office, and so forth, in the same sense in which it would be worth the while of the physician to take the medical course or the lawyer to take the legal course."[23]

This action did not automatically solve all the problems of the new school. Some idea of the difficulties that were met in working out its curriculum and establishing its position in the university may be gained from the statement of Roswell G. McCrea, who, thirty years after the reorganization just mentioned had taken place, said, "for the first time the Wharton School stands on the same independent footing as the other schools in the University of Pennsylvania."[24] James wrote of this period of construction:

> There were no models which we could follow. There was no experience from which we could profit. The funds themselves were very inadequate for the purpose in hand. The other departments in the University and most of the other members of the faculty were bitterly opposed to the whole project.

[21] E. J. James, *Education of Business Men* (an address before the Convention of the American Bankers' Association at Saratoga, September 3, 1890).

[22] E. J. James, *Origin and Progress of Business Education in the United States* (address at Conference at University of Illinois, 1913).

[23] *Ibid.*

[24] Roswell C. McCrea, "The Work of the Wharton School of Finance and Commerce," *Journal of Political Economy*, XXI (1913), 111.

And even if they did not actually interfere to prevent the progress of the work, they stood with watchful, jealous eyes to see that no concession of any sort should be made to these new subjects which, in their opinion, might in any way lower the level of scholarship as the ideal had been accepted by the upholders of the traditional course.[25]

It was not until 1898, seventeen years after the founding of the Wharton School, that a second collegiate school of business made its appearance, although unsuccessful proposals had been made earlier in several institutions. The second school established was at the University of Chicago and was known as the College of Commerce and Politics.[26] In the same year the University of California established a College of Commerce.[27] In 1900 at the University of Wisconsin a department was organized known as a School of Commerce,[28] and in the same year at Dartmouth College was founded the Amos Tuck School of Administration and Finance.[29] Also in that year a Department of Economics and Commerce was established at the University of Vermont,[30] and a School of Commerce, Accounts, and Finance at New York University.[31]

At the close of the year 1900 there were, then, seven colleges and universities maintaining departments for the avowed purpose of training young men for the business world. To say that there were these seven schools does not in any way suggest the difficulties which had been met nor the years of agitation that had preceded their establishment. Each school faced problems peculiar to its own situation, and whether the difficulty was the attitude of the liberal-arts college, similar to that already ex-

[25] E. J. James, *Origin and Progress of Business Education in the United States* (address at Conference at University of Illinois, 1913).

[26] *University of Chicago Official Publications*, 1898. (See Appendix for a reproduction of the first announcement of the school.)

[27] *Catalogue, University of California*, 1898. (See Appendix for a reproduction of the first announcement of the school.)

[28] *Catalogue, University of Wisconsin*, 1900. (See Appendix for a reproduction of the first announcement of the school.)

[29] *Tuck School Announcement*, 1900–1901. (See Appendix for a reproduction of the first announcement of the school.)

[30] *Catalogue, University of Vermont*, 1902–3.

[31] *Bulletin of New York University*, 1901–2.

pressed in connection with the organization of the Wharton School, or insufficient funds, or adverse public opinion, or what not, the resulting organization was one that met as best it could the particular problems confronting it. This diversity in organization and administration is revealed in the very diversity of their titles. There were "schools," "departments," "courses," of "commerce," "administration," "finance," "economics," and "politics." There was general agreement on the part of the organizers that a man entering business should be given an opportunity to concentrate his attention on a course which would train him for the profession of business in much the same way that schools of law, engineering, and medicine were preparing their graduates to enter the professional world. They were agreed, too, that this course should not be similar to the commercial course offered in the public high school and in the private "commercial college" but should give a broad view of the complex business world of the twentieth century. It was recognized then, as it is now, that after spending from two to four years in a collegiate school of business, whether graduate or undergraduate, these young men were not qualified immediately to take executive positions. They must learn the details of the individual enterprise in the office, plant, or sales force of the individual firm; for there are many details which can be learned only in actual practice.

The type of organization adopted varied from institution to institution. At the Amos Tuck School at Dartmouth, "the trustees decided upon the establishment of a higher school of administration, commerce and finance. However, they looked upon instruction of that sort as professional in its nature and they wished to guard jealously the established policy that the college is an institution of the arts, humanities, and sciences. They, therefore, organized an associate school similar to the medical and engineering schools already established at Dartmouth."[32] This meant a two-year business course based upon three years of work in the liberal-arts college, or upon a Bachelor's degree.

[32] H. S. Person, "The Amos Tuck School of Dartmouth College," *Journal of Political Economy*, XXI (1913), 117.

At the University of Vermont, the Department of Commerce and Economics was organized under the Department of Arts, and put upon the same basis as the "Classical Course" and the "Literary-Scientific Course," also organized under this Department.[33]

At the University of Chicago, in 1894, a plan for a School of Commerce and Industry was presented to the Senate of the University. The plan was approved but lack of funds did not permit its organization as a separate and distinct college at that time. The result was "merely to secure a grouping of existing courses within the existing organization of the University. The *Annual Register* for 1898–99 lists as the colleges of the University 'the College of Arts, Literature, and Science; Commerce and Politics; and the College for Teachers,' but there was listed no separate dean of the College of Commerce and Politics, nor was there a separate faculty. Save for a change of name to 'College of Commerce and Administration,' this situation continued to 1902."[34]

At Wisconsin it was the realization on the part of a few persons that some students were registering as special students, selecting courses for purposes of business training in the colleges of engineering, law, agriculture, or wherever they happened to be offered, that led to the establishment of a department for business training.[35] "Students who entered the University with the intention of becoming business men, as well as their parents, guardians, and teachers, began to examine the curriculum of the University in its various colleges and departments, with the result that they discovered that in the aggregate there were being given a large number of courses which were clearly valuable from the standpoint of business training."[36] These were the courses that made up the nucleus of the new school.

[33] *Catalogue of the University of Vermont* (1902–3), p. 17.

[34] L. C. Marshall, "College of Commerce and Administration of the University of Chicago," *Journal of Political Economy*, XXI (1913), 97.

[35] W. A. Scott, "Training for Business at the University of Wisconsin," *Journal of Political Economy*, XXI (1913), 127.

[36] *Ibid.*, p. 128.

There was divergence, also, in regard to admission requirements and the duration of the course. In its earliest organization the Wharton School offered a three-year course. The students were divided into "three classes—Sub-Junior, Junior, and Senior. On the completion of the three years' course of study, and on the presentation of a satisfactory thesis, the degree of Bachelor of Science, with special mention of the course pursued,"[37] was conferred by the University of Pennsylvania. In the reorganization which took place in 1883, the name of the school was changed to the Wharton School of Commerce and Finance, and the work was confined to the upper two years of college, the Junior and Senior years, the first two being based on the liberal-arts course offered in the university.[38] In 1894 the course was extended to four years in which commercial subjects were grouped with liberal-arts subjects permitting the student to begin his vocational work immediately upon entrance to college.[39] The courses at Chicago, California, and Wisconsin were also four-year courses. The universities of Vermont and New York offered a two-year course, the work at Vermont covering the Junior and Senior years of college[40] and at New York University any two years of college.[41]

Admission requirements in the four-year colleges of business were the same as the requirements for entrance to any of the other departments of the university. At New York University students were admitted to the two-year course either upon completion of high school, or of the Freshman year in college, or upon graduation from any liberal-arts college; and Seniors in the New York University College, at University Heights, were permitted to count the first year of work in the Commercial Department for their Senior year of work at the college. The degree offered at New York was the same as that offered at the University of

[37] *Catalogue of the University of Pennsylvania*, 1881.

[38] E. J. James, *Progress of Business Education* (Conference at the University of Illinois, 1913).

[39] R. C. McCrea, *op. cit.*, p. 111.

[40] *Catalogue of the University of Vermont* (1902–3), p. 75.

[41] *Catalogue, New York University*, 1901.

Wisconsin, namely, Bachelor of Commercial Science.[42] At the University of Vermont candidates for the course were admitted to the "Freshman year having successfully pursued the studies included in the curricula of accredited four-year High Schools in the New England States."[43]

The Amos Tuck School of Administration and Finance at Dartmouth admitted to its course only those who presented a Bachelor's degree, except under the following conditions:

> Students who are able to present courses taken as advanced electives in an undergraduate curriculum, which are substantially the same as those offered in the first year, will be given standing in the second year.
>
> And students of approved ability, of three years' undergraduate standing, may elect the first year courses of the Tuck School for their work of Senior year.[44]

This two-year course, with the second year following graduation from college, is the first graduate school of business education. Upon completion of this two-year course a certification of the school was given. This later became a Master's degree.

That these schools were filling a need is evidenced by a statement made by Professor William A. Scott, director of the School of Commerce in the University of Wisconsin. In 1900 eighty-four students were registered in the School of Commerce at that institution. Professor Scott was interested in finding out exactly what proportion of the students would have gone to the university had not the School of Commerce been established. Answering a question to this effect, twenty-six replied that they would not have entered Wisconsin or any other university had not the School of Commerce been established. They would have gone directly into business. Three would have taken special courses in the College of Liberal Arts to prepare them for business, and twelve would have selected engineering, law, and agricultural courses because these would approximate giving them the training for business which they desired. Professor Scott states, "It seems to me that these statistics indicate very clearly the need

[42] *Catalogue, New York University* (1901–2), p. 295.

[43] *Catalogue, University of Vermont* (1902–3), p. 74.

[44] *Tuck School Announcement for 1900.*

for Schools of Commerce. At any rate, we are satisfied that in the establishment of the School we have reached a new constituency which has not been previously attracted by our University courses."[45]

In the next ten years (1900–1910) the idea of collegiate education as a training for business grew somewhat more rapidly although the number of schools established did not average more than one per year for the decade. The most interesting development in this period was the founding of the Harvard Graduate School of Business Administration.

> The decision of Harvard University to base its business course, like its law course, on an undergraduate degree is certainly not the expression of a view that this should be the general policy of all schools of business. It does indicate the belief that an opportunity should be afforded in at least one business school for the college graduate to prepare directly for business without either sacrificing two years of his general college course or undertaking his business training subject to the limitations imposed on undergraduate instruction by relative immaturity of the students and the volume of work imposed on the teaching staff by the rapidly increasing size of the schools.[46]

Since 1910 the growth of the movement has been phenomenal. One hundred and sixty-five schools were established in the fourteen years after 1910, making a total by 1925 of 183 institutions offering collegiate business education. Rapid strides have been made in developing equipment; in improving methods of instruction; in organizing faculties; in successful placement of graduates. But with this growth have come many problems of purpose, method, organization, position in the educational system, and above all, the problem of an appropriate curriculum. In 1916 the American Association of Collegiate Schools of Business was organized for the purpose of promoting and improving higher business education in North America.[47] There are now

[45] E. J. James, "Relation of the College and University of Higher Commercial Education," *American Economic Association Bulletins*, II, 144–65, quoting a report made by Professor Scott.

[46] Wallace B. Donham, "The Unfolding of Collegiate Business Training," reprint from *Harvard Graduates' Magazine* (March, 1921), p. 337.

[47] Constitution of the American Association of Collegiate Schools of Business.

(1926–27) 38 schools in the association. Schools of business may be admitted to it by meeting the standards of admission to the Association. Those standards set up specifications regarding (1) admission requirements of the school of business; (2) the minimum quantitative requirement of semester hours for the undergraduate degree; (3) the instructing staff, regarding rank, training, salary, and teaching load; (4) the number of fields of work offered and requirements within specific fields; (5) the library facilities. In addition, the school of business must be a division of a college or university whose credits are accepted by members of the Association of American Universities or the Association of American States Universities; and the college or school of business must also have been established and operated for a specified time in accordance with the standards set by the Association of Collegiate Schools of Business.[48]

It is not too harsh a statement to say that the problem of the immediate future in collegiate business education is that of bringing order out of the disorder which was inevitably the result of the tremendous force with which this "wave" hit the American educational system. Not only has the increase in the number of schools been at an astounding rate, but a sudden and tremendous increase in enrolment has occurred. The most striking increase in enrolment occurred in the year 1919–20 when several of the leading schools had entering classes which were from 50 to 100 per cent larger than ever before. Quantitatively, the movement is secure and an established fact in American educational life; qualitatively, it has as yet many elements of weakness. Few persons connected with the movement, however, question its essential soundness and still less do they question that its opportunity is commensurate with that of other professional schools. The case for professional schools was recently well put thus:

> So much has been said of the dangers of professional schools in our universities, of their possible encroachment upon academic tradition, of their possible disregard of culture and idealism, that it will do no harm to dwell upon our hopes.

[48] "Standards of Collegiate Schools Petitioning for Admission to the American Association of Collegiate Schools of Business" (adopted May, 1925).

What does it mean that now in the ten leading American Universities enrolling 87,000 students, 50,000 are registered in professional schools directly preparing for professional careers? It means, in a few years, 50,000 men and women released for trained leadership, free from the bias of creed, free from the blight of pseudo-science, free from the curse of the mere technician; practitioners imbued to a certain extent, we trust, with university ideals of culture, of service, and of public devotion. From among them will arise lawyers and business men who are also economists, teachers who are also educators, engineers who are nation-builders, physicians who are humanitarians, and clergymen who are social leaders.

What has the development of professional schools within universities meant to the professional schools themselves? It has heightened the ideals of professional training and service. It has given impetus to research, without which professional schools soon degenerate into technical schools. It has led to the adoption of curricula of appropriate length, resting upon a sound general education, in which the deferred as well as the immediate values are recognized. It has made possible the attraction of scholarly men as instructors. It has attracted students of high intelligence with extensive preparation, who are willing to invest in themselves sufficient time and money for adequate training.

And so the university has provided the environment necessary for professional schools to achieve the well-rounded development of which the leaders in each of the professions have dreamed.[49]

Commercial education affiliated with the university is making the art of business into more scientific form, not to make the results less artistic but rather to make them more realistic. Business itself has created the demand for men with breadth of vision who not only know their particular industry but also have a comprehensive view of the whole social structure and a knowledge of the functions and processes involved. The collegiate school of business is attempting to prepare such persons for entrance into the business world.

FRANCES RUML

UNIVERSITY OF CHICAGO

[49] Roswell C. McCrea, "Economics in a Business Curriculum," *Journal of Political Economy*, XXXIV, 219–43, quoting from an address by Robert J. Leonard, director of the School of Education, Teachers College, Columbia University.

APPENDIX

THE WHARTON SCHOOL OF FINANCE AND ECONOMY

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The association of this school with the University of Pennsylvania marks the purpose to connect with the special training in economic and mercantile science that general culture which is as necessary to the business man as to every other useful member of society.

The students of the School are divided into three classes,—Sub-Junior, Junior and Senior.

On the completion of the three years' course of study, and on the presentation of a satisfactory thesis, the degree of Bachelor of Science, with special mention of the course pursued, will be conferred by the University.

TERMS OF ADMISSION.

Candidates for admission as full students of the Sub-Junior year must pass examinations in all the subjects specified in the following list under the head A, and either those which are specified under the head B or those under the head C:—

A. Arithmetic. Thomson and Quimby's *Algebra*. Chauvenet's *Geometry*. Chauvenet's *Plane and Spherical Trigonometry*. Bowser's *Analytical Geometry*. Ancient and Modern Geography. Freeman's *General Sketch of History*. English Grammar and Composition. Haldeman's *Outlines of Etymology*. Abbott's *How to Write Clearly*. McElroy's *System of Punctuation*. The Elements of Rhetoric. Lounsbury's *English Language*. Collot's *French Reader*. Brégy's *French Rules* (Pt. I.). Inorganic and Organic Chemistry.

B. Horace's *Satires* and *Odes*. Livy. Virgil's *Æneid*. Cicero's *Orations against Catiline*. Tacitus's *Agricola, Germania* or *Annals*. Cicero's *De Officiis* or *De Senectute*. Arnold's *Latin Prose Composition*. Arnold's *Greek Prose Composition*. Xenophon's *Anabasis* (four books). Homer's *Iliad* (three books). Xenophon's *Hellenics*. Æschylus, Aristophanes or Euripides, (two plays). Thucydides (the Sicilian Expedition). Whitney's *German Grammar*. Whitney's or Woodbury's *German Reader*.

C. Schmitz's *German Grammar*. Storm's *Immensee*. Hodge's *Course of Scientific German*. Brégy's *French Rules* (Pt. II.). Souvestre's *Un Philosophe sous les Toits*. Descriptive Geometry. Mechanics. Analytical Chemistry (Qualitative). Drawing (Geometrical and Isometrical. From the Flat. Free-Hand Sketching. Linear Perspective. Projection of Shadows. Architectural Drawing).

In exceptional cases, proficiency in subjects equivalent to those required may be accepted by the Faculty.

Candidates who have passed through the Freshman and Sophomore Classes in either the Department of Arts or the Towne Scientific School, will be admitted as full students without examination. Other applicants for admission will report to the Dean on the sixteenth day of June, at 9 o'clock, A. M. Those who desire to enter as full students will pass on that and the following days the examinations for admission, beginning with those for the Freshman Class of either of the departments named above. (See pp. 15–16 or 23–24.)

Special students, not candidates for a degree, will be admitted to the studies of this School without being required to pass the examinations for admission exacted of full students provided the Faculty are satisfied that they possess the elements of a good English education, and are able to profit by the course of instruction. They shall pursue all those studies which the Faculty shall require of them.

Persons who are desirous of prosecuting any special study in any department of this School, can make arrangements for that purpose with the Professor in charge of that department, subject to the approval of the Faculty.

COURSE, METHODS AND MEANS OF STUDY.

Instruction is given by recitations and lectures and through original research under the direction of the Professors.

A portion of the studies are of a general nature, covering those branches of literature, history, language and physical science which are requisite to a liberal education. The rest are specially adapted to the purposes of the School.

The University possesses what is believed to be the largest and most complete library of works on economic science that is to be found in any educational institution of the world. The foundation was laid by the great collection of the late Stephen Colwell, comprising between seven and eight thousand volumes, and including nearly every important book in this science in the English, French and Italian languages, besides many in German. This has been supplemented (1) by the gift from Mr. McCalmont, of London, of a collection of some three thousand English pamphlets, covering the period from the close of the seventeenth century till our own time, and bound in chronological order; (2) by the bequest of the library

of the late Henry C. Carey, including many works and pamphlets which appeared since Mr. Colwell's death, and especially rich in statistical literature, European Governmental reports, and the like.

Further information respecting this school will be found on pp. 9–13. Letters of inquiry may be addressed to either the Rev. Professor R. E. THOMPSON, Dean of the Faculty, or to Professor JOHN G. R. MCELROY, its Secretary, at the University.

COURSE OF STUDY.

SUB-JUNIOR YEAR.

SOCIAL SCIENCE.—E. Peshine Smith's *Political Economy*. Thompson's *National Economy*. Johnston's *History of American Politics*.

MERCANTILE PRACTICE.—Oral instruction in business procedure, in the management of trusts, and in the routine of banking.

ENGLISH.—Chaucer (*The Canterbury Tales*). Spenser. Shakespeare (Several Plays Illustrating the Growth of the Dramatist's Mind and Art). Compositions and Declamations.

GERMAN.—Lessing's *Nathan der Weise*. *Der Mensch und die Natur*.

FRENCH.—Racine or Corneille.

PHYSICS.—Mechanics, including Hydrostatics, Pneumatics and Sound.

MINERALOGY.—General description of Minerals and Crystallography.

LATIN (Elective with Drawing).—Smith's *Principia Latina*, Part I. Cæsar (*De Bello Gallico*).

DRAWING (Elective and Latin).—Free-Hand Drawing, and Drawing from the Flat.

JUNIOR YEAR.

SOCIAL SCIENCE.—History and Functions of Money. International Balance of Trade. Theory and Practice of Banking. The Credit System. Monetary Crises and Panics. The Stock and Bond Market.

—— ——.—Municipal, State and National Taxation. The Management of Revenue. Sinking Funds. Methods of Taxation, and their Moral and Social Influence. (Direct and Indirect Taxes, Land Taxes, Taxes on Corporations, Internal Revenue Taxes, and Duties on Imports.) The Relation of Wars and Military Systems, through Taxation, to National Industry. The Handling of Public Debts.

—— ——.—Industry, Commerce and Transportation. The National Necessity for a Balance of the Great Industries. National Self-Defence in the Development of the Industries.

—— ——.—Wage Questions. The Relations of Capital and Labor. Strikes and Lock Outs. Harmony and Discord.

MENTAL AND MORAL SCIENCE.—Atwater's *Logic*. Whewell's *Elements of Morality*.

ENGLISH.—Compositions and Declamations.

GEOLOGY.—Elements of Geology. Descriptive and Determinative Mineralogy. Metallurgy.

PHYSICS.—Heat and Light.

LATIN.—Cicero's *Epistolæ*, *De Senectute*, etc. (Long's edition). Virgil's *Georgics*.

GERMAN.—Schiller's *Wilhelm Tell*. Goethe's *Hermann und Dorothea*. Translations into German. Whitney's *German Grammar*.

FRENCH.—Molière.

SENIOR YEAR.

LAW.—Elementary Law. Mercantile Law (Law of Partnership. Law of Common Carrier. License Laws. Land Laws, etc., etc.). Constitutional Law of the United States and of the Commonwealth of Pennsylvania. The Rules of Order and Public Corporation Meetings.

SOCIAL SCIENCE.—Lectures and Living Issues (Land, Labor, Monetary Questions in their Popular Aspects, Socialism and Communism, Free Trade and Protection, Charity Organization, Popular and Industrial Education).

—— ——.—Mulford's *Nation*.

—— ——.—Original Research in the Theory and History of Economical Questions, under direction of the Professor.

HISTORY.—Lectures on Modern and Mediæval History. Guizot's *History of Civilization in Europe*.

ENGLISH.—Compositions and Declamations.

PHYSICS.—Electricity. Practical and Astronomical Physics.

ASTRONOMY.—Mathematical Astronomy.

THE UNIVERSITY OF CHICAGO

THE COLLEGE OF COMMERCE AND ADMINISTRATION

III. THE COURSE OF STUDY.

ADMISSION.

The subjects required for admission to the College of Commerce and Administration are the following:

History (1 and 2)	1 unit
History (3a and 3b)	1 "
Latin (1 and 2)	2 units
Latin (3, 4, and 5)	2 "
French (1, 2, and 3) / German (1, 2, and 3), or / French and German	3 "
English	3 "
Mathematics (1a, 1b, and 2)	2½ "
Mathematics (3)	½ unit
Physics	1 unit

REMARKS:—1. By a unit is meant a subject pursued in a course of study comprising not less than 150 hours of prepared work.

2. A detailed statement of the particular work required in the various subjects above outlined will be found in the *Circular of Information of the Colleges*, which may be obtained by addressing the University of Chicago.

3. The numbers in the parentheses correspond to those used in the detailed description of admission subjects in the *Circular of Information of the Colleges* (pp. 6-10).

4. The prescribed units are printed in boldfaced type.

5. The subjects in Roman type may be pursued in the University, provided an equivalent amount of work in other subjects is presented for admission (see *Circular of Information of the Colleges* (p. 5).

THE COLLEGES.

The four years' College course in the University of Chicago is divided into two parts.

The first two years, corresponding to the usual Freshman and Sophomore classes, forms the JUNIOR COLLEGE.

The second two years, corresponding to the usual Junior and Senior classes, forms the SENIOR COLLEGE.

The year is divided into four quarters, beginning with the first day of the Summer Quarter. The Autumn, Winter, and Spring Quarters begin on the first day of October, January, and April, respectively, and continue twelve weeks each. The Summer Quarter begins on the day next following the last day of the Spring Quarter, and continues eleven weeks.

It is expected that students will be in residence three quarters in the year, the fourth being taken as a vacation.

The unit of work in the Colleges is the *Major*—a subject pursued daily for one quarter (twelve weeks). Full work implies 3 Majors each quarter.

In the Junior College the work includes 18 Majors besides a specified amount of public speaking and physical culture.

In the Senior College the work includes 18 Majors, besides physical culture for four quarters. At the end of the Senior College course the student receives the Degree of Bachelor. In the College of Commerce and Administration this degree is *Bachelor of Philosophy*.

IV. THE WORK OF THE JUNIOR COLLEGE.

The 18 Majors of the Junior College course are distributed as follows:

Economic History	1 Major
Commercial Geography	1 "
Civil Government in the United States	1 "
Mediæval, Modern, and American History	3 Majors
Introduction to the Study of Society	1 Major
Modern Languages	3 Majors
English	3 "
Mathematics	2 "
Science	2 "
Elective	1 Major

Public Speaking is required two hours a week during two quarters. Physical Culture is required four half hours a week during the six quarters.

Substitution for Prescribed Work: A student who has had in high school or academy adequate courses in Civil Government, Mediæval, Modern, or American History, substantially equivalent to the ones offered by the University, will be excused from these requirements and may select in their stead Senior College requirements or such other courses in either of the Colleges as may be approved by his Dean.

V. THE WORK OF THE SENIOR COLLEGE.

The work of the Senior College consists of 18 Majors; of these seven are prescribed and eleven are elective. The prescribed courses are:

Principles of Political Economy	2 Majors.
Elements of Jurisprudence	1 Major.
Federal Constitutional Law	1 Major.
History of Europe in the Nineteenth Century	1 Major.
Recent American History	1 Major.
Psychology	1 Major.

ELECTIVE COURSES.

The remaining 11 Majors of the Senior College will be selected, with the advice of the Dean, from among the following groups of courses. In special circumstances technical scientific work may be more beneficial than the courses listed here. These or other courses outside the following list may be taken only with the consent of the Dean.

VI. GROUPING OF COURSES.

Some suggestions on the grouping of courses are added for the guidance of students who are seeking preparation for any of the following activities.

Banking.—Money, Banking, Financial History of the United States, Accounting, Trusts, Technique of Commerce, Law of Property.

Railroads.—Railway Transportation, Comparative Railway Legislation, Technique of Commerce, American Shipping, Accounting, Training Course in Statistics.

General Industries.—Modern Industries, Technique of Commerce, Accounting, Banking, Money, Trusts, Economics of Workingmen, The Group of Industrials, Industrial Development of the United States.

Foreign Commerce.—History of Commerce, Commercial Treaties, American Shipping, Industrial Development of Europe, Industrial Development of the United States, Colonial Economics.

Consular Service.—International Law, Diplomatic History of Europe, Diplomatic History of the United States, History of Commerce, American Shipping, Training Course in Statistics, Technique of Commerce, American Agriculture, Commercial Treaties.

Journalism.—Development and Organization of the Press, Money, Banking, Trusts, American Shipping, Financial History of the United States, American City Life, Municipal Sociology, Economics of Workingmen, Comparative Government, International Law, Oral Debates, Argumentation.

THE UNIVERSITY OF CALIFORNIA

COLLEGE OF COMMERCE.

FACULTY.

The Faculty of each College consists of the President of the University and the resident Professors, Associate Professors, Assistant Professors, and Lecturers giving instruction in the College.

UNDERGRADUATE COURSE.

The requirements for admission to this college are: (A) Oral and Written Expression, (1) English, (3) Algebra, (4) Plane Geometry, (5) Government of the United States, (6) and (7) Latin [or, until further notice, (15a) French and (15b) German], (11) Physics, (8) Greek or (14) English or (15a) French or (15b) German—unless the French and German have been offered in lieu of (6) and (7); and either (10) and (12) History, or two of the main subdivisions of (12), namely, (a) Advanced Mathematics, (b) Chemistry, (c) Botany, (d) Zoölogy. Subjects (8) and (9) Greek may together be substituted for subjects (6) and (7).

There are two curricula in this college between which the student may choose, according to the object he has in view: one lays emphasis on the history and present organization of commerce, the other lays emphasis on the technological studies concerning transportation and the materials of commerce; both afford an opportunity for the study of modern languages. For details regarding the studies pursued, consult the statements made under the several courses of instruction in this Register, and in the Annual Announcement.

The requirements for a degree in this college consist of one hundred and twenty-five units,* distributed as follows:

A. Prescribed Studies.—Seventy-one units, distributed as in one of the following schemes and taken in the order announced by the several departments concerned, as explained in the detailed description of the Courses of Instruction.

1. Open only to students who have offered Latin or Greek for matriculation:

English, 10 units; Latin, French, German, History, 23 units—not less than two nor more than three of these subjects, the courses in them to be chosen in proper sequence from the announced lists; but the French or German, if chosen, must be pursued two years, unless advanced standing be attained; *Mathematics, 10 units; Natural Sciences, 12 units*, chosen from the following list: Physics, Astronomy, Chemistry,

*A unit is a credit of one hour of work per week for one half-year.

Botany, Zoölogy, Morphology, Geology, Mineralogy, Entomology, (lecture and laboratory courses in Economic, Systematic, and Structural Entomology), and Bacteriology; *Geography, 6 units; Military Science, 5 units.* Students excused from the exercises in Military Science are required to make up the deficiency in units in other departments of study. (See page 90.)

II. Open to all students in the College:

Natural Sciences, 26 units, chosen from the following list: Physics, Astronomy, Chemistry, Botany, Zoölogy, Morphology, Geology, Mineralogy, Entomology (lecture and laboratory courses in Economic, Systematic, and Structural Entomology), and Bacteriology; *English, 10 units; French* or *German, 14 units; Mathematics, 10 units; Geography, 6 units; Military Science, 5 units.* Students excused from the exercises in Military Science are required to make up the deficiency in units in other departments of study. (See page 90.)

B. The Group Elective.—I. For those who present the first set of requirements for admission and prescribed studies the group elective will be twenty-four units of advanced studies in one subject, or not more than two cognate subjects, chosen from one of the following groups:

7. Jurisprudence, either alone or combined with one subject from Group 2.

8. Economics and Politics, (including History.)

3. The Semitic; Greek, Latin, French, Spanish, Italian, German, English; Chinese and Japanese, languages and literatures, or any other languages and literatures that may at any time be announced among the courses of instruction; Decorative and Industrial Art, etc.

II. For students who present the second set of requirements for admission and prescribed studies the group elective will be twenty-four units of advanced studies in one subject, or not more than two cognate subjects, chosen from one of the following groups:

9. Geography, Astronomy, Geology, Civil Engineering.

10. Botany, Agriculture, Mineralogy, Mining, Chemistry.

3. The Semitic; Greek, Latin, French, Spanish, Italian, German, English; Chinese and Japanese, languages and literatures, or any other languages and literatures that may at any time be announced among the courses of instruction; Decorative and Industrial Art, etc.

C. Free Electives. Thirty units, chosen from the entire list of courses, subject, however, to any sequence of studies required and announced by any department.

Fifty units of the Prescribed Studies mentioned above must be completed during the first two years; twelve units of the Natural Sciences may be taken as late as the third year.

The choice of the Group Elective may be announced at the beginning of any half-year after sixty units of work have been satisfactorily completed, but not later than the beginning of the Senior year. A statement of the courses permissible for the Group Elective is made from year to year in the Announcement of Courses of Instruction.

The thirty units of Free Electives may be chosen at any period during the undergraduate course.

Regular Students are required to take at least fifteen units each half-year during the first three years. In exceptional cases, and for good reason, they may be allowed to take less than the minimum ordinarily required, provided that the deficiency in units thus incurred be afterwards made up, either by subsequently taking more than fifteen units each half-year, or by extending the course over a longer period than is usually necessary. At least ninety-three units must be completed in order to attain Senior standing. Seniors will not be required to take more than twelve units each half-year, if that minimum will complete the requirement for graduation.

In addition to these studies, able-bodied male students are required to take the exercises in Physical Culture during the first two years of residence.

II. Specially arranged and correlated electives leading to the particular business which the student intends to enter.

III. Free electives chosen for the purposes of general culture.

I. Required Studies.

The courses belonging to this group are of three sorts:

(a) Those needed as a foundation or preparation for more technical courses which are to follow. Under this head fall the courses in Trigonometry, Chemistry, Physics, Mediaeval, Modern, and American History, and Economic Geography. Trigonometry is needed in the study of Physics; Chemistry is essential to the study of the Materials of Commerce and their Adulterations; and Physics lays the foundation for the study of the Generation and Transmission of Power, Materials of Construction, etc. The courses in History and Economic Geography are essential to the successful study of the subjects enumerated under (b), and they are also of direct practical advantage in extending the student's horizon and in giving him such an acquaintance with the national habits and characteristics and such skill in the interpretation of men and events as are essential to the highest success in business.

Group (b) includes a number of courses designed to acquaint the student with the structure of the business and commercial world, and with the methods of conducting modern business enterprises. Under this head fall the courses in the Industrial History of England, the History of Commerce, Social and Economic Legislation, including tariff laws, consular regulations, labor laws, etc.; Transportation, Banking and the Mechanism of Exchange; Business Organization and Management; Commercial Law; and Economics.

The studies belonging to group (c) are as essential to the general equipment of the business man, no matter what particular branch of business he pursues, as those mentioned under (a) and (b). It includes German, French, and Spanish. In one of these languages at least, and in two, if the student desires and possesses the requisite ability, he must acquire such facility in reading, speaking and writing as will enable him successfully to conduct business in the countries in which the language he has learned is spoken. It includes also a series of graded courses in the study of English, designed to enable the student to use his mother tongue fluently and correctly. It includes also a course in the Generation and Transmission of Power, designed to give the business men who graduate from this school a knowledge of the natural sources and limitations of water, steam, and electric power, and of the important place which these physical agencies occupy in the successful conduct of business

enterprises. The course in the Materials of Commerce, which is required of all students, is designed to be a laboratory course conducted with the aid of a well-equipped Commercial Museum, which the University hopes to be able to provide in the near future. Such a museum should contain properly labeled and described samples of the principal raw materials and manufactured products entering into the commerce of the world and of their various forms of adulteration, and this course is designed to give each student a knowledge of those materials which enter into the business he expects to follow, and a degree of skill in detecting adulterations and shoddy.

II. Technical Electives.

So far as the resources of the school will permit, these studies will be so arranged as to meet the needs of individual students. For example, a young man who wishes to enter the consular service will be given courses in Public and Private International Law, Statistics, Administration, History of Diplomacy, Modern Languages, the special duties of consular officers, etc.; one wishing to enter a special branch of manufacture, so far as the resources of the school will permit, will be given an opportunity to study the nature of the raw materials used in that industry, the sources from which they may be obtained, their cost, the present distribution and state of that industry throughout the world, the chief markets for the product, the methods peculiar to that particular business, etc., etc. A student wishing to engage in the commerce of our new West Indian possessions, will be given an opportunity to learn to read, write, and speak the Spanish language, and to study the physical resources and the industries of those islands, their political and commercial history, the laws and customs of the people, as well as the methods and peculiarities of the particular branch of commerce he expects to enter. A student wishing to become a banker will be given courses in the technique of banking, foreign exchanges, investments, the laws relating to commercial paper, the history of banking in the important countries of the world, technical banking problems, etc. It is the design of the school, to the extent that its resources will permit, to secure as instructors in these technical and special subjects, men who are specialists and who know by actual experience the subjects they teach.

For the coming year the school is prepared to offer the following subjects as electives: Materials of Construction, Insurance, Consular Service, Spanish, French, Italian, German, Public Finance, Statistics, Administration, International Law, Constitutional Law, Economics, Geology, Mineralogy, Nineteenth Century History, So-

cial and Economic History of the United States, or History of the West. The authorities of the university expect to be able largely to increase this list along the lines of technical subjects and those

Senior Year.

First Semester: Social and Economic Legislation,

of water, steam, and electric power, and of the important place which these physical agencies occupy in the successful conduct of business

Statistics, Administration, International Law, Economics, Geology, Mineralogy, Nineteenth Century History, So-

cial and Economic History of the United States, or History of the West. The authorities of the university expect to be able largely to increase this list along the lines of technical subjects when the school is in actual operation and the needs of the students are revealed. With the resources at present available it will be possible to organize technical courses other than those above enumerated if there is a sufficient demand for them.

III. Free Electives.

A limited number of free electives from the large number of courses given in the other departments of the University will be allowed students in this school. The exact number will necessarily vary according to individual needs. Each student will be required to pursue the technical courses offered for his particular purposes, but he will be allowed to complete his program with free electives.

ARRANGEMENT OF STUDIES.

The arrangement of studies for the Academic Year 1900-1901 will be as follows: (The figures indicate number of hours per week).

Freshman Year.

First Semester: Economic Geography 2; Economic History of England 2; German, French, or Spanish 4; Physics 3; English 3; Trigonometry 2; Drill and Gymnastics 2.

Second Semester: Economic Geography 2; Language continued 4; American History 4; English 3; Physics 3; Drill and Gymnastics 2.

Sophomore Year.

First Semester: History of Commerce 2; Mediaeval History 3; Language continued 2; Chemistry 4; English 2; Elective 3; Drill and Gymnastics 2.

Second Semester: Business Organization and Management 2; Elementary Economics 3; Modern History 3; Language continued 2; Chemistry 4; Elective 2; Drill and Gymnastics 2.

Junior Year.

First Semester: Commercial Law 3; Transportation 2; Language* continued 2; Nineteenth Century History 3; Elective 8.

Second Semester: Money and Banking 3; Transportation 2; Language* continued 2; Generation and Transmission of Power 3; Elective 8.

*Not given in 1900-1901.

Senior Year.

First Semester: Social and Economic Legislation, including tariff laws, consular regulations, labor laws, etc.* 3; Materials of Commerce* 3; Language continued* 2; Thesis 2; Elective 8.

Second Semester: Social and Economic Legislation* 3; Materials of Commerce* 3; Language continued* 2; Thesis 2; Elective 8.

SPECIAL LECTURERS.

A number of special lecturers will be provided for the purpose of acquainting students with present business conditions and opportunities. So far as possible men representing the chief business enterprises of the United States will be secured for this purpose.

REQUIREMENTS FOR GRADUATION AND DEGREE.

Students who have successfully completed the above course of study and who have in addition satisfied the faculty of the school that they possess a good working knowledge of Bookkeeping and Accounts, will be admitted to graduation, and will receive diplomas conferring upon them the degree of Bachelor of Commercial Science.

CHARGES AND FEES.

All fees are required to be paid strictly in advance at the beginning of each semester before cards are issued by the class officer entitling the student to admission to classes.

Tuition is free for all students from the State of Wisconsin.

After ten days from the beginning of the semester no fees are returned except by special vote of the Board of Regents.

Tuition for non-resident students, per semester..... $15.00
Incidental fee for all students, per semester..... 10.00

Communications regarding this school should be addressed to W. D. Hiestand, Registrar, or to William A. Scott, Director.

*Not given in 1900-1901.

College have created the Amos Tuck School of Administration and Finance.

The courses of this school are designed to prepare men for those more modern forms of business which have become so exacting as to require the same quality of academic training as the older professions.

It is the aim to give:

First, A body of knowledge and principles applicable to any form of business organization and management, — the training which is needed by the business man as such.

Second, A more special preparation for banking, insurance, and railroad service, as well as for domestic and foreign commerce, the diplomatic service and public administration.

Third, Such further teaching and training as will prepare men for journalism or for participation in civic affairs.

The courses appropriate to the three interests indicated are identical for the first year. In the second year, the principle of election is admitted to some extent.

Among the more general subjects treated in the school are:

Political, Anthropological, and Economic Geography.
Modern and Recent European and American History, as well as the History of the more important outlying States.
Social Statistics and Demography.
The Psychology of Social Life.
American Constitutional and International Law.
Economic Development of the United States since the Civil War.
Modern Languages, embracing English, French, German, and Spanish.
English Composition and Speaking.

The more special subjects include:

Corporation Finance.
Money Markets and Speculation.
Industrial Resources and Industrial Organization.
Accounting and Auditing.
Insurance.
Investments.
Practical Banking.

Transportation, including Railroad Service, Water Transportation, and Foreign Commerce.
Theory and Technique of Statistics, including Commercial Statistics.
Commercial and Corporation Law.
Public Finance.
Public and Municipal Administration.

These courses will be arranged to suit the needs of the individual student. After the first year of required work, and in connection with the general courses of the second year already mentioned, such of the special courses outlined above will be assigned to each student as will best prepare him for his chosen work. Assignment of the special courses to the training for definite careers is made below, subject to such modification later as the best interests of the student may require.

GENERAL MERCANTILE AND COMMERCIAL BUSINESS

Courses 1, 2, 3, and 4 in Business Organization and Management.
Course 2 in Finance.
Course 1 in Accounting.
Course 3 (c) in Transportation.
Courses 5 and 6 in Law and Political Science.

BANKING

Courses 1, 2, and 3 in Finance.
Courses 1, 2, and 4 in Business Organization and Management.
Course 1 in Accounting.
Course 3 (b) in Transportation.
Courses 5 and 6 in Law and Political Science.

RAILROAD SERVICE

Courses 1 and 4 in Business Organization and Management.
Courses 1 and 2 in Accounting.
Courses 1, 2, and 3 in Transportation.
Courses 1 and 2 in Law and Political Science.

FOREIGN TRADE

Courses 2 and 3 in Business Organization and Management.
Courses 3 and 4 in Transportation.

Practical Banking.

Courses 3 and 4 in Transportation.

Courses 1 and 2 in Statistics.
Course 4 in Modern History.
Course 7 in Law and Political Science.

INSURANCE

Course 1 in Insurance.
Courses 1 and 4 in Business Organization and Management.
Course 2 in Finance.
Course 1 in Accounting.
Courses 1 and 2 in Statistics.

ADMINISTRATION

Course 1 in Administration.
Course 3 in Business Organization and Management.
Courses 1 (b) and 3 in Finance.
Course 1 (a) in Transportation.
Course 4 in Modern History.
Course 8 in Law and Political Science.

JOURNALISM

Course 4 in Modern History.
Courses 1, 2, and 3 in Business Organization and Management.
Courses 2 and 3 in Finance.
Course 3 (c) in Transportation.
Courses 7 and 8 in Law and Political Science.
Course 1 in Administration.
Courses 1 and 2 in Statistics.

TRAINING FOR CIVIC AFFAIRS

Courses 3 and 4 in Modern History.
Courses 2 and 3 in Business Organization and Management.
Course 3 (a) in Transportation.
Courses 7 and 8 in Law and Political Science.
Course 1 in Administration.
Courses 1 and 2 in Statistics.

CONDITIONS OF ADMISSION

All candidates will be required to present a bachelor's degree, except those who enter under the following conditions:

Students who are able to present courses taken as advanced electives in an undergraduate curriculum, which are substantially the same as those offered in the first year, will be given standing in the second year.

Students of approved ability, of three years' undergraduate standing, may elect the first year courses of the Tuck School for their work of Senior year. At the close of the year, they may formally graduate from the College with the bachelor's degree for which they entered. After a year of graduate work in the Tuck School, they become eligible for certification in that school. Students who enter under this provision are expected to have taken the usual College work in mathematics, science, and the ancient or modern languages, and in addition, such other courses as are equivalent to the following work in Dartmouth College: the prescribed work in History, Economics, and Political Science, and one elective in the departments of History, Economics, and Sociology, together with two years of prescribed and elective work in English Composition and Argumentation, and the elementary courses in two of the three languages, German, French, and Spanish.

Students from other colleges entering the Senior year of Dartmouth College, to avail themselves of this privilege, must present with their certificate of transfer a record of their standing.

SPECIAL STUDENTS

Applicants who may show fitness to pursue particular courses may be received as special students and will be given certification for work actually accomplished, but will not be given the full certification of the School.

BOOK REVIEWS

History of Socialist Thought. By HARRY W. LAIDLER. New York: Thos. Y. Crowell Co., 1927. Pp. 713. $4.00.

This book is intended as a supplement to the author's *Socialism in Thought and Action* (Macmillan, 1920), and was written with the dual purpose of serving both college classes and the general reader. Though the author, in his preface, justifies its publication by reference to the various "outlines of history" and "stories of philosophy" that have recently appeared, it would be a mistake to carry the analogy to these "short cuts to knowledge" too far. For Laidler's book is much more scholarly than the great majority of these, and does not strive for simplicity through the elimination of difficult though important ideas.

In painstaking fashion he covers the various writers, books, and movements that have contributed to the development of Sociolist ideas, from the Bible down to the present day. Frequent quotations lend a scholarly air to the book, while the element of human interest is maintained by means of numerous biographies of the important figures, some, like Owen and Marx, being treated in the body of the work, while others are presented in thumb-nail footnote studies.

Starting with the oft-quoted protests of the biblical prophets against the oppression of the poor by the rich, the author traces the subsequent development of these protests and of the Utopian school through Owen and the French Utopian Socialists. Then in 1848, with the publication of the *Communist Manifesto,* came Marxian Socialism, replacing the idealistic attempts to remake the world overnight by the theory of an economic evolution, along Hegelian lines, which was leading irresistibly to the Socialist state. Some thirty-five years later came a new departure, in the opportunist Fabian Socialism of England, aiming at the conquest of the middle class as well as the workingman, and basing its Socialism on the Ricardian theory of rent rather than on the Marxian theory of surplus value. In Germany at the same time appeared the Revisionists, led by Bernstein, who attacked the economics of Marx, and, like the Fabians, emphasized the day-to-day gains rather than the ultimate ideal. Opposed to them for

the control of the German Socialists were the orthodox Marxists, led by Karl Kautsky.

In France Marx's ideas were also revised, but to the "left." The Syndicalists accepted the doctrine of the class struggle, but placed their emphasis upon direct action and the control of industry by the workers. They attacked the orthodox group both for their resort to peaceful parliamentary action and for the "servile state" which they seemed bent on creating, a state which would dominate the lives of the workers even more completely than the present one. Midway between Syndicalists and Socialists came, in the twentieth century, the last great movement in Socialism, the English Guild Socialists, advocating the setting-up, by peaceful and gradual methods, of the control of industry by the workers.

The book is not alone a study of ideas; it is also a history of events, one section being devoted to post-war Socialist developments. A good bit of space is devoted to the Russian Revolution, the tactics of the Communists, and the attitude of the Socialists toward Communism. In addition, some space is devoted to the British Labor Party and the German revolution, and a brief survey is given of the position of the Socialist movement in the important countries of the world. The book closes, except for a brief, clear summary, with a study of movements contributing to the development of Socialism, including a good survey of the Consumers' Co-operative movement.

In any book of this kind, attempting to convey the history of ideas over a stretch of twenty-six hundred years, much room must inevitably be left for difference of opinion as to the relative importance of particular ideas and the relative space which should consequently be allotted them. Objection might be made, for instance, to the scanty treatment accorded the anarchist movement. The author allows it only a footnote of a little over a page in length, not half as much for instance, as he gives to the views of Horace Greeley.

Similarly, Socialism in America is given little mention. True, the United States has never shown very much development; yet the importance of any advances in this country should be magnified, first, by the fact that the book is written primarily for American students, and second, by the great importance of the United States to the capitalistic world. Thus the adoption by Congress of the Plumb Plan for railroad control in 1920 would have meant a great deal to world-socialism; yet no mention is made of this important Guild Socialist proposal, which was not only given some consideration by the con-

gressional committees, but which was actively sponsored by the railway brotherhoods, perfect representatives of conservative American unionism. No mention is even made of the government operation of the railroads during the war, which is cited by a good many people, rightly or otherwise, as a test of the practicability of Socialism.

Some rather novel shifts of emphasis appear in the book. For instance, in several places the author makes the statement that Socialists and Communists differ only as to tactics, and not, in the large, as to type of society aimed at. This is in striking contrast to a section of his previous book (p. 124), in which he distinguishes carefully between the two on the basis of aims, the Communists advocating complete public ownership, even of household goods, while the Socialists would confine it to the means of production. The change in aim on the part of the Communists, if it has actually occurred, deserves some consideration in the book; it is too important to be tacitly accepted.

When all has been said, however, the book remains a very scholarly treatment of a difficult subject. It should prove of great value to teachers of economics who have felt the need for a good reference book covering the views of the different schools of Socialism and the points of controversy between them.

JOSEPH J. SENTURIA

WASHINGTON UNIVERSITY

Problems in Retailing. By DONALD K. DAVID and MALCOLM P. MCNAIR. New York: A. W. Shaw Co., 1926. Pp. xxiii+789.

This book is designed to take the place of *Retail Store Management Problems,* by Donald K. David, published in 1922. It is in no sense a revision of the earlier book, however, as practically all the problems are new. The book is the basis of a full-year course in Retail Store Management in the Harvard Business School. The total number of problems exceeds two hundred. By far the greater number of these relate to department store management.

The problems are divided into six major groups, the first two of which are of an introductory or general nature. The last four groups conform to the rather typical division of retail-store functions into merchandising, store operation, and finance and control. The problems in the first of the six sections, dealing with retail accounting, are selected in such a way as to bring out the typical accounting issues

faced in retail store operation, such as those of expense classification, departmentizing, accounting for cash discounts, for mark-ups and mark-downs, the calculation of turnover, etc. Most of the material in this section is very elementary and should be familiar to any first-year student in general accounting.

In the second section, entitled "The Effect of Customers' Buying Habits on Retail Policies," the authors deal with such problems as those of store location and layout, exclusive agencies, selection of merchandise for different types of stores, private brands, the style factor as it affects buying and selling, competitive price policies, credit policies, delivery policies, and the handling of complaints, adjustments, and alterations. This section is rather long and its contents diversified. They do not conform in any respect to the typical organization of large retail stores.

Sections III and IV relate to merchandising. In Section III are presented over fifty problems dealing with organization, buying policies and sources, mark-downs and shortages, the retail method of inventory, the planning of sales and stocks, the determination of purchase limits, and the maintenance of stock records. Section IV is confined to selling and advertising activities. A number of problems dealing with price policies are included in this section.

The organization of material in Section V conforms rather closely to the group of activities typically carried on by the store operation division of a large department store. The problems deal mainly with receiving and marking procedure, store operation, the maintenance of reserve stocks, the handling of cash, the authorization of charge sales, the handling of credit, returns, and adjustments, the compensation of personnel, and personnel relations.

The sixth and last section is entitled "Control, Finance, and General Policy." Several problems in this section deal with the question of responsibility for performance of the control function. Others relate to such matters as merchandise accounting, expense classification and distribution, budgeting, current and long-time financing, instalment selling, the leasing of departments, and price policy.

The seven hundred odd pages of problems are supplemented by an appendix in which are presented a number of cases, a very excellent bibliography of retail management, a considerable number of accounting forms and statements, and operating expense data for various types of retail stores.

The book is without question the most valuable single source of

information on retail store management in existence today. It is very comprehensive, particularly with reference to department store operation. It is on the whole well organized, and the problems are for the most part well stated.

From a teaching standpoint a number of minor criticisms may be offered. The book contains far more material than can be dealt with thoroughly even in a full year. There is a considerable amount of unnecessary duplication in subject matter. The classification of problems is not as sharp as it might be. Price policies, for example, are dealt with in three different sections of the book. The same criticism may be made of much of the material on accounting and control. It is very difficult to secure continuity in presentation of the material to students. This is due in part to the use of the problem method and in part to the fact that an effort is made to study three different types of retail institutions. Some of the problems are badly stated or are presented in such a way that information needed for solutions is not obtainable. In numerous instances the student is given no means of securing the background or supplementary information necessary for an intelligent handling of problems. It should be pointed out, however, that footnotes and cross-references to other problems are somewhat helpful in this respect.

Despite the foregoing criticisms, most of which have to do with the use of the book in classroom, one need feel no hesitation whatever in describing the text as the most useful compilation of retail management practices in existence today. It is to be highly recommended both to the student and the retail store executive.

J. L. PALMER

UNIVERSITY OF CHICAGO

Psychology in Personal Selling. By A. J. SNOW. Chicago: A. W. Shaw Co., 1926. Pp. xvi+620. $6.00.

Dr. Snow's second book in the field of business psychology is more restricted in scope and more thorough and empirical in treatment than was his earlier *Psychology in Business Relations.* Most of the problems considered in the present volume were dealt with or touched upon in the previous work, but the organization and points of emphasis are considerably changed and a large amount of experimental data has been introduced. Moreover, all the material specially concerned with advertising as distinct from selling has been omitted. In

both books Dr. Snow has shown skill in presenting facts and theories in a form useful at the same time for students and for practical business men.

The treatment of personal selling is divided into four parts, dealing respectively with the customer, the salesman, the sale, and the selection and training of salesmen. The central theme of the discussion is that the sale should be viewed as a process of satisfying the wants of the customer, and that the salesman must proceed by analyzing these wants and building his selling procedure upon them. The prominent place given to wants and their satisfaction distinguishes the book from its predecessor by the same author and from most of the other books in this field. To claim originality for it, however, as "a new theory of selling" (p. iv) is going too far. The same approach is to be found in earlier books by Tipper, Hotchkiss, Hollingworth and Parsons, Charters, Strong, and somewhat less explicitly in many other writings.

Part I lays the foundation for an understanding of the sale by setting forth an analysis of man viewed as an adaptive organism. Reflexes and nerve mechanisms are described in sufficient detail to convince even the most casual reader that the author is determined to be "scientific." The ensuing treatments of motives and mental processes, individual differences and types of customers, are more strictly relevant. These matters are ably handled, with the use of various bits of helpful statistical and experimental data. But necessarily a large part of the treatment is made up of common sense, clever insight based on experience and on the survey of sales cases, and guesses suggested by psychological knowledge.

Instincts, in accordance with the current fashion in psychology, are rejected. They are replaced by "classes of wants, desires, and needs" which are largely the results of social acquisition rather than being of hereditary origin. Differences between individuals, races, sexes, and special groups, in their abilities and characteristics, are discussed with a wealth of material. Some of the significant facts are considered about perception, habit, emotions, memory, imagination, and thought as these processes affect buying. Finally, an interesting attempt is made to classify customers into types, though avowedly the types are only of "suggestive value."

Part II is concerned chiefly with the personality of the salesman. The discussion is based in part on data derived from rating scale investigations and studies of physical traits; but the most important

and most relevant thoughts again come from personal experience and from familiarity with the opinions of others.

The progress of the sale itself is pictured and interpreted in Part III. This section, which represents "the main concern of the book," is reached after 360 pages of preliminaries; it occupies exactly one-fourth of the whole volume. The sale is described as involving four main steps: (1) the customer's wants, needs, desires, and his need for satisfying these; (2) securing conviction; (3) producing decision, secondary desire, and buying action; (4) satisfaction of the customer. The process of securing attention and interest is dealt with as part of step 1 since that heading includes "making wants conscious" and "intensifying the wants." Under step 2, belief, reasoning, and suggestion are presented, the first of these especially well. Stages 3 and 4 include the usual type of material on these topics. The analysis of the sale, as a whole, is written with the problems of the salesman primarily in mind. The treatment is clear and the points are well illustrated with examples from selling practice.

The final division of the book consists of two chapters on the selection and training of salesmen. The selection chapter is largely made up of Dr. Snow's own findings from research investigations with rating scales and mental tests.

In the opinion of the reviewer, this volume by Dr. Snow is one of the two best books on the subject of sales psychology. The other is Strong's *Psychology of Selling and Advertising*. Both should prove valuable for students and for a select group of business men.

ARTHUR W. KORNHAUSER

UNIVERSITY OF CHICAGO

Readings in Corporation Finance. By MILTON N. NELSON. New York: Ronald Press Co., 1926. Pp. ix+612. $5.00.

As the title indicates, this book contains a selection of readings suitable to supplement a textbook or course of lectures in corporation finance. The excerpts are chosen from the texts and periodical contributions of outstanding American writers in this field. The author considers arrangement more important than editorial comment in guiding the student, so he has included no introductions to the various selections, but, instead, has inserted numerous subheads. The arrangement does not differ significantly from that typically followed in the texts in the field. In each general topic the first selection is chosen to

give the student a view of the relation of that phase of the study to the general financial structure. The first chapter deals with the field of corporation finance; the next eight are devoted to a discussion of the various types of stocks, bonds, and mortgages. Three chapters are concerned with the financial aspects of promotion, capitalization, and financial plans, nine with sale of securities, three with short-time credit, two with surplus and dividend policy, two with expansion and consolidation, and the remaining three with failure, liquidation, and allied topics. Throughout, considerable emphasis is placed on the more recent developments in the field. A detailed nineteen-page index is appended.

The book should be useful in providing in accessible form a fairly broad range of reading material in corporation finance.

The Work of Corporate Trust Departments. By R. G. PAGE and PAYSON G. GATES. New York: Prentice Hall, Inc., 1926. Pp. 466. $5.00.

This book, written by two officers of The Bankers Trust Company, treats of the functions and methods of the corporate trust and corporate agency departments of a large financial institution. A brief description of the organization of a large trust company is followed by a detailed discussion of trust records. In the discussion of typical mortgages, special attention is given to the clauses which require scrutiny or action on the part of the corporate trustee. The duties of the latter in regard to sinking funds, redemption, and allied subjects, and its relation to the mortgagor and bondholder in case of default or reorganization are developed in some detail. In the last chapter the minimum fees for various trust services in general use in New York City are quoted, and forms suitable for the control of receipts and disbursements are suggested. Three appendixes giving examples of the forms of the corporate mortgage, the equipment trust, and the deposit agreement, and a fourth, stating the listing requirements of the New York Stock Exchange, occupy the last 140 pages.

Though the language is sufficiently technical to avoid verbosity, the exposition is lucid and concise. Illustrations of specimen documents and forms consume an unusually great amount of space. Discussions of legal technicalities are replaced by admonitions to consult counsel before acting. Discussion of a general economic nature is avoided. The work is intended for trust officers and should interest students in this special field.

The Farmers' Campaign for Credit. By CLARA ELIOT. New York: D. Appleton & Co., 1927. Pp. xii+312.

Beginning with a rapidly moving survey of early credit schemes and the surroundings in which they flourished, Miss Eliot shows the close relationship which, in the past, has existed between falling price level, agricultural depression, and demand for credit reforms.

There follows in chapters ii and iii a discussion of the problem of agricultural long-term credit. The extent of mortgage indebtedness, the sources and uses of the funds are described in quantitative terms. Geographic differences in rates and commissions are analyzed to show the difficulties and expenses involved in bringing the western farmer who wishes to borrow into contact with those desiring to invest in farm mortgages. The Federal Farm Loan Act is fully discussed as a partial remedy of the situation. Next the problem of intermediate agricultural credits is clearly stated and the conclusion is reached that prior to 1923 the Federal Reserve System was "not quite adequate" to meet the needs of the farmer.

Chapters vi and vii deal with the recent agricultural crisis. Full realization of the multiplicity of factors involved makes a clear cut analysis difficult. A full and, on the whole, a fair discussion of the criticisms levelled at the Federal Reserve Board for its policy before 1921 is followed by a critical estimate of the numerous proposals for relief through legislative enactment. Special emphasis is given to the Agricultural Credits Act of 1923.

Abundant statistical material is presented throughout the whole discussion. A somewhat rare combination of historical perspective, sympathy, and intelligent criticism pervades the book.